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ORIGINAL ARTICLES

DISORDERS OF THE NERVOUS SYSTEM.*

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PART II.

NEURASTHENIA—NERVOUS DYSPEPSIA—REVIEW.

THAT neurasthenia exists is admitted, that it is characterized by various symptoms, definite as well as indefinite, I cannot deny, but that treatment should be essentially psychic is a fallacy too elusive for the optimist in medical science—dirigation alone is a support too flimsy upon which to erect an ornate and substantial superstructure as a landmark for future generations of physicians whose lives will be devoted to physical and physiological demonstrations whose keynote spells precision.

In a communication published some years ago (Magnesium Infiltration, Wisconsin Medical Recorder, 1908), I ventured the following observation:

"In view of the numerous tangible evidences confirmatory of my contention in regard to the deleterious effects of magnesium infiltration, it seems that a record of "nervous" cases together with the treatment adopted would be a work of supererogation, so I shall confine my remarks to several conditions which are representative of physical rather than metaphysical or psychological deviations from normal."

In this estimate, however, I was greatly mistaken, so as concrete evidence, several typical cases are now placed on record.

Whether or not my views are accepted, it is doubtful if we shall continue to read long articles containing directions for hair-splitting diagnoses between cardiac, dyspeptic and sexual neurasthenia, or which attempt to locate and describe the twilight zone between simple nervousness and typical or real neurasthenia, since it is now within the range of human probability to verify the clinical diagnosis by rational treatment, the crucial test of modern therapeutics.

NEURASTHENIA.

Mrs. K. is an active, intelligent and highly educated lady, 35 years of age, married and the mother of three children. In fact, she presents the appearance of perfect health, and the suggestion that she required medical treatment was taken as a joke. However, after a brief consultation, it was learned that she had suffered all the characteristic symptoms of neurasthenia for at least a year past, and that she had been so wrapped up in the idea of alkaloidal medication, that she had conscientiously remained in bed for a period of three months in order to get rest (?), and secure the benefit of the active principles of plants—atropine, strychnine, morphine, codein, etc. The only benefit derived from this treatment, visible to the naked eye, related to the general physical condition—there was absolutely no perceptible change in the neurasthenic symptoms.

Treatment was begun on the plan previously outlined, but unfortunately this patient's peculiar make-up, prohibited the empoyment of alteratives, and it was impossible to employ the calcium iodide even in small doses, because of the profound and depressing effects upon the nervous system. Indeed, it must be stated that the results appeared almost alarming, and I was called to see her at her home, where I found her in bed filled with the most distressing forebodings. Modifying treatment, and limiting on it to alkaline-saline medication and dissociation of magnesium according to the law of mass action, active treatment was carried out which resulted in apparent and complete recovery in the course of a week. This claim is fully warranted by the subsequent history—there has been no relapse ineighteen months, and all the forbidding symptoms have subsided.

Mrs. C. came under observation five years ago, a typical neurasthenic. For two years preceding her visit, she had been under more or less constant treatment for tuberculosis of the bowels. Apparently, judging from appearances and the history of the case, the diagnosis was correct. Careful examination, however, discovered, not only that we had to deal with magnsium infiltration, but also that there was a local lesion which had been overlooked by her previous atendants. It seems that the bowel trouble had gradually developed within a year after the birth of her child, and the attacks of diarrhea, appearing at irregular intervals, were such as to cause great prostration—sometimes ten, fifteen or twenty bowel movements in the course of twenty-four hours.

As stated, a careful examination discovered the lesion; there was an arthritis or inflammation of the joint between the sacrum and inominate bone, on the left side, (sacro-iliac synchondrosis), and this was sufficient to account for all the unfavorable symptoms—including tuberculosis.

Treatment was conducted for the purpose of absorbing the inflammatory products, calcium iodide being employed, coupled with medication for the purpose of restoring the normal alkalinity of the blood, calcium carbonate in alternation with calcium sulphate, to which was added from time to time alkaline-saline treatment. This case was somewhat tedious on account of the debilitated condition of the patient, but perfect recovery ensued in the course of a few months, and there has been no recurrence of the symptoms of tuberculosis.

Mrs. S., age 30, came under observation several years ago suffering from neurasthenia, as a result of shock. Standing on a railroad platform, she saw her mother killed by an approaching train, and of course, was seriously prostrated. While her physical condition was but little changed, the mental make-up was greatly obscured—she was timid, uncertain, and there was well marked panphobia.

As a result of treatment on the lines indicated, covering but a few weeks, this patient made a complete recovery, and for at least five years, has been engaged in active work as a teacher, enjoying perfect health.

Miss S. is an unmarried lady, thirty years of age, and for the past three years has been unable to do anything in the way of housework; she is afraid to mingle in society, and as a result of the neurasthenia, she has become a nervous wreck. Consultation with several

*Extracts from the Ms. of a proposed book entitled, "The Chemical Problem in Nutrition.

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eminent physicians has resulted in no apparent relief, and her medical attendant says nothing can be done for her, that she will have to wait two or three years, and take the chances of making a spontaneous recovery.

Treatment in this case, along the lines indicated, resulted in immediate and marked improvement. The patient became interested in her usual duties, enjoyed the visits of her friends and acquaintances, and took an active part in all social work, so that in the course of six months, none of the unfavorable symptoms remained.

Mr. P. is a man about 40 years of age, well nourished and apparently in good health, but he is extremely nervous, timid, uncertain, and had seriously considered the propriety of giving up his business—that of manager of a department store—so that he can take a much needed rest (?).

Treatment in this case was carried out on the general plan previously outlined, and the results were satisfactory, indeed. In the course of a few weeks he gained confidence. Timidity and uncertainty in regard to business affairs were changed to confidence, and as a matter of fact, he gave up the notion of taking a vacation. I only saw him three or four times, and had almost forgotten his existence, until one day, while dining in a railroad station, I was approached by an entire stranger, as I supposed, but presently he introduced himself, and I saw a gentleman in perfect health with none of the untoward symptoms which had been present at the time he was under treatment—and he was profuse in his compliments.

(Mr. W.) While it is not common to find neurasthenia in males, such cases do occur, and the following record will demonstrate how neurasthenia is a direct result of magnesium infiltration.

A young man, 30 years of age, married and fairly well nourished, gave the following history:

About a year previous to this visit, he had what the doctors called paralysis, the entire left side of the body being deprived of motion and sensation. At the time of this attack, he weighed perhaps 175 lbs., and was the picture of health. The only previous complaint that he made, referred to an acute or sharp lancinating pain in the back of the head—the occipital region.

Only partial recovery had taken place at the time of his visit; the headaches, while less severe, still persisted. The power in the left arm and hand had not fully returned, and occasionally he would experience a peculiar tingling pain from the finger tips to the shoulder.

Ability to handle the left leg was considerably impaired; in fact, he had to walk with considerable caution when the pavement was slightly uneven to avoid falling down on the street. This patient complained especially of nasal catarrh, with pain in the forehead above the eyes, together with frequent dropping of mucus in the pharnyx. The digestion was very much impaired, so much so that the patient had hunted up medical literature, and fully convinced himself that he was the victim of constitutional syphilis. He claimed that it was impossible for any one to have ulcers in the mouth and on the tougue such as he had, without syphlitic infection, and he was thoroughly convinced that he was then in the second stage of the disease, and that the attack of paralysis, a year previous, was conclusive evidence that he was right in his diagnosis—this was the neurasthenic element cropping out.

Treatment in this case was conducted strictly in accordance with the usual plan—to restore the digestive capacity, neutralize acid excess, and promote magnesium dissociation. In addition to this, however, he had suitable local treatment for catarrh. This patient was seen only once again, a month later, reporting that the catarrhal trouble had practically subsided, although it was in the month of March, when catarrhal troubles are most prevalent. He said the digestion had improved, that the ulcers in the mouth and on the tongue had disappeared, and that the difficulty in using the left leg had decidedly improved, but the neurasthenic element again developed when he insisted that the left arm and hand had never troubled him. He admitted, however, that he had not suffered from headaches, and since that visit, I have only heard indirectly that he is attending to his usual duties, and apparently enjoying perfect health.

In this instance, treatment was conducted for the purpose of correcting the constitutional deviation, the attack of paralysis being regarded as a local manifestation, due to long continued acid excess, diminished alkalinity of the blood, together with imperfect oxidation and defective elimination. There was no syphilitic infection, the mouth ulcers and catarrh along with some slight skin eruptions being due entirely to indigestion. That they resembled syphilis was a mere coincidence, and the patient finally, rather reluctantly, admitted his mistake in diagnosis, when the symptoms disappeared without specific treatment.

A well marked case of sexual neurasthenia occuring in a male, age 54, supplies a typical illustration of the intimate relation existing between magnesium infiltration and neurasthenia—if it does not actually prove that the latter is the logical and consecutive result of the former. This patient had been ailing for a year or more, complaining of inability to work, suspicious of every effort made in his behalf, and throwing a "scare" into his family from time to time by his sudden ebullitions of nervous irritability. Spending most of his time in bed, he had beguiled his medical attendants, at home and in the hospitals, into the need for anodynes and hypnotics to relieve pain and produce sleep, so that he gave promise of becoming a confirmed habitue in addition to the original malady—because these patients fail to respond to the usual dosage.

The patient's digestive apparatus was in an extremely bad condition, the tongue heavily coated, the stomach and intestinal tract distended with gas, obstinate constipation, the salivary reaction highly acid and the knee-jerk greatly exaggerated. The pulse was of fairly good volume, but receding, a characteristic of magnesia heart, this being confirmed by the accentuated or "snappy" second sound of the heart. At times, in such cases, we find valvular incoordination, but there was no valvular derangement in this instance.

Active treatment for a period of two weeks on the lines prescribed produced a marvelous change for the better. The patient was able to be up and around the house, and even ventured outside, giving directions for the farm work occasionally. He took his meals regularly with the family and was such a good feeder that his wife jokingly talked of raising his board. During the time this patient was under treatment every precaution was taken to prevent him from discussing with any one his peculiar malady—by keeping him constantly in the family circle.

In the course of seven or eight weeks, while under

observation, the patient made very satisfactory progress, but manifested no little disappointment when told that the original malady, although it came first, would be the last to disappear, that everything depended upon his ability to maintain his digestive capacity. At any rate, the outlook was not sufficiently propitious, and he insisted upon having another doctor before breakfast the next morning.

Now comes the most interesting part of the report. Within a week or ten days the patient was bundled off to a more pretentious hospital, and it was given out that they would soon know what ailed him. The sanguine expectations were not realized, however, as he returned in a less promising condition than when he left home. He insisted upon having the doctor again early the following morning—who told him to get out of bed and go about his business, that he was a sound man physically.

After this, the atmosphere cleared, the man attended to his usual duties and there did not apear to be a cloud on the horizon—until an attack of acute indigestion came on after a hearty dinner, and he died within an hour—in my judgment, from magnesia heart, the organ being insulated—a short-circuit.

NERVOUS DYSPEPSIA.

The term, nervous dyspepsia, is a clincial division, and applies in the case of a rapidly increasing class of sufferers who have not yet reached the neurasthenic stage—they may be said to occupy the territory between simple or ordinary indigestion and neurasthenia, the twilight zone. While they experience days of "misery," with nights of exasperating insomnia, the point of view is not altogether pessimistic, because they usually find some friendly doctor who will indulge their fancy by recommending a hypnotic to insure refreshing (?) sleep, together with "working" medicine, to unload the lower bowel, thus establishing a vicious circle—verily, "The last of this man is worse than the first." When the financial condition warrants, such patients are shunted or dragged to a sanitarium for rest or exercise, or possibly for electricity, mineral waters, massage, mud baths or hot air, no effort being made to unfold or elucidate the chemical problem in nutrition. What with antiseptics to destroy the myriads of bacteria and infinite swarms of spores, pathogenic and otherwise—untold numbers of miraculous dietary lists, with quarts of sour milk (Bulgarian bugs of direct importation), the outlook for the nervous dyspeptic is most bewildering and kaleidoscopic.

What's the answer? Let the patient's condition as regards chemical reactions be restored to normal; let the diet, rest and recreation be in keeping with his physical and nervous make-up and adaptability—then we can readily remove or correct the disability which is responsible for the untoward symptoms. Nature is notably conservative, responsive to the slightest variation affecting the environment and recuperative in a marked degree, but we must adopt the measures necessary to enable the cellular structures to functionate. The following selected cases will serve to illustrate the principles advanced:

A colleague residing in one of the Western states requested a suggestion as to the treatment of what might be termed a typical case of nervous dyspepsia with its sequelae. A letter descriptive of the case follows:

"I have a case where I wish to try your theory, and see how it will work out. My patient is a man 54 years of age and weighs about 200 lbs. About ten years ago, he had a severe attack of optic neuritis, largely due to auto-intoxication. He recovered from this with good results. He has had at times a little eye trouble since, for which I have treated him. About a year ago, he had an attack of aphasia, which was quite severe. He has been treated constantly since by one ——— greatest neurologists, and a general physician here. He has also had some eye trouble which I have looked after, but I have done nothing with the other part of the case. The doctors have done about all they could for him; there has been considerable improvement in his case as compared with a year ago, but he is not in a condition now to attend his business in any way. I have thought that this might be a case where your treatment would do some good.

This patient has at times considerable gastric and intestinal fermentation. I shall be glad if you will write me how you would handle this case, and the dosage in which you would use the remedies. I have made a test with litmus as suggested, and find there is an excessive acidity. The other doctors are at the end of their resources now, and are doing nothing for the patient. As they have given up, I told the family I would like to have a try at the trouble."

Apparently, this is a rather complicated case, because in addition to the neuritis and the aphasia, we have to deal with evidences of fatty degeneration consecutive to fatty infiltration. Unfortunately, my correspondent said nothing about the condition of the heart, the arteries, or the knee-jerk, and in giving directions for treatment it was necessary to determine the therapeutic indications from his fragmentary report. However, the directions included calcium iodide in small doses together with alkaline-saline treatment, the object being two-fold—the first to promote magnesium dissociation, the second to neutralize acid excess and flush the tissues. The physician was advised to make a slight change in the treatment at the end of a week, one of the hepatin tablets to be given before breakfast, two tablets before each of the other meals, and he was also cautioned that in case the patient was subsisting upon a liquid diet, other treatment would have to be substituted—to improve the digestive capacity.

About three weeks after advising treatment, the following report was received:

"I write you again regarding my case of aphasia, and will give you a little more in detail the history of the case. The patient weighs about 200 lbs. and is a little under six feet in height. He is a business man and has been actively engaged in large business deals. The attack came on somewhat over a year ago, probably largely caused by the nerve-strain incident to completing large contract. As I wrote you before, I had nothing to do with treating him at that time, but some months after the attack, he came to me for treatment of his eyes.

Before beginning the treatment suggested by you, I had an urinalysis made, both chemical and microscopical. The specific gravity was 1.022, and nothing abnormal was found. Everything about his condition showed excessive acidity, and for this reason it occurred to me that your line of treatment might be of value. There is nothing in the nature of arterio-sclerosis, the pulse is strong and regular, but softer than it should be. I think there is something in the remark that you make in your

letter that there might be some fatty degeneration connected with the case. The patellar reflex is present, but not nearly as active as it should be.

There has been a very marked improvement in the two weeks while I have emloyed the treatment suggested. I have used the alkaline-saline right along, the calcium iodide the first week, and the hepatin tablet the second week; now, I am starting on the third week and have put him back on the calcium iodide again. There was lack of ability to pronounce a great many words, but this (aphasia), was not complete; the mental condition was somewhat impaired; he could not get names of people he knew. Since taking this treatment, the mental condition has decidedly improved, and he has much less difficulty getting the words wanted. This part of the case shows a decided improvement. When he began treatment, he said that he could not use the right leg as well as the left. There was not enough trouble, however, to cause any difficulty in walking or to be noticeable when he walked, but he said he could not use that side as well as the other. To-day, when he was in, he said that the right side was just as good as the left, and he could use it just as well. He also said that he noticed an improvement in the last few days, which was very marked the way he could use the right side."

As usual, in this case, there was a well marked neurasthenic element, the patient absolutely refusing to discontinue the employment of a popular hypnotic, because he was under the impression that he could not sleep without it. I was asked to prescribe a placebo and advise further treatment, but the complications were too serious to warrant my taking any further chances without a personal examination, since these are the cases which suffer from "short-circuit," and die suddenly without knowing what ails them.

Mrs. L. is a married lady, forty years of age, and had frequent attacks of what has been called bilious headaches. She has been a semi-invalid for at least two years, and although she was subjected to a formidable abdomnial operation nine years ago, there does not appear to be any direct connection between the operation and her present illness. The appetite varies, she has more or less cough with expectoration during the morning hours, and she is suspicious that she is suffering from tuberculosis. This suspicion seems to be confirmed by the general plan of treatment which has been carried out during the last few months. Until a week ago she had been confined to bed for seven weeks, receiving local and internal treatment for chronic laryngitis. There is a well marked catarrhal condition of the nasal cavity, and this catarrh also affects the stomach and the intestinal tract, so that the diagnosis would very properly be classed as gastro-intestinal catarrh. The nasal catarrh, the laryngitis and the headaches are simply incidental manifestations or concomitants of the digestive disorder. The nervous element is indicated by the rapid pulse-rate, ninety beats per minute, but there is no elevation of temperature; the respirations are normal, and strange to say, the salivary reaction is neutral, thus showing that nature is making every possible effort to effect a cure. Further evidence of the disorder is shown by the sallow complexion, the skin, where exposed to light, being almost bronzed or mottled.

The treatment of this case was extremely simple—hepatin for the digestive disorder together with calcium carbonate to replace the depleted lime content of the nuclear-proteid, and in addition, a local remedy for the nasal catarrh.

This patient made rapid improvement, and there was practically no change in the treatment during the time while she was under observation.

Miss K. is a seamstress about fifty years of age and can only attend to her duties about two days each week, owing to lack of sleep. She suffers from persistent gaseous eructations, and she is strongly under the impression that she is suffering from cancer or some malignant form of internal disorder. The patient seems to be well nourished, but is extremely nervous and persists in explaining her view of the trouble. Examination shows that the stomach and intestine are greatly distended, due to decomposition and fermentation of food. The sleepless nights are brought about through auto or self-infection. A point worth noting in this connection relates to the inability to eat anything for breakfast. As soon as food is taken into the stomach nausea immediately follows, but she is usually ready for the mid-day meal, and as a rule, eats heartily.

Treatment in this case was conducted solely for the purpose of re-establishing, as far as possible, the normal condition of the digestion. In addition to the usual hepatin tablet, she received the copper arsenite, 1/100 grain, both to be taken together before meals. By way of instructions as to dietary, this patient was advised to avoid roast beef and beef steak, and liquids during the meal were absolutely interdicted. Improvement in this case was rapid, and complete recovery resulted after a few weeks' treatment, although the malady had long continued and a point had been reached when it was a question whether she would have to give up her work entirely or enter a sanitarium.

Mrs. A. is thirty years of age, married, and the mother of one child, ten years old. For the past seven or eight years she has suffered more or less constantly from attacks of acute dyspepsia, occurring principally at night. Various lines of treatment have been faithfully carried out under the direction of numerous physicians—nineteen in all—during this time, and still she depends almost entirely upon domestic remedies, such as aromatic spirits of ammonia, whiskey and "rubbing," with or without liniments. The patient is well nourished and were it not for the history to the contrary, one would say that she injoyed remarkably good health. The failure to secure relief from these sudden attacks, together with the interruption of rest, two or three times each week, has caused decided depression, but the neurasthenic element has not manifested itself—she is hopeful, enthusiastic and confident that her trouble will finally be relieved.

Treatment in this case was very simple, the hepatin tablet together with copper arsenite constituted the principal treatment. The alkaline-saline medication was recommended temporarily, to be discontinued from time to time in the discretion of the patient. She was given special instructions, should any further attacks develop, to take the copper arsenite tablet at once, and follow with large quantities of water as hot as could be sipped, the basis of this treatment being founded upon the well known antiseptic properties of the copper arsenite.

Fortunately, however, she never had but one mild attack, and with some slight treatment to correct the

lime depletion, she made a perfect recovery. This statement is warranted by the subsequent history—nearly three years has now elapsed, and there has been no return of the nervous depression or the dyspepsia, but of course, the instructions as to dietary have been carried out with a reasonable degree of care, and that is all that is necessary to enjoy good health.

Mrs. N. is thirty years of age, married, and the mother of three children. For several years past she has suffered from some obscure internal difficulty and her medical attendant has insisted that there was no probability of recovery without an operation. The patient is very thin, but does not look emaciated, although a cursory examination shows that she is subject to intestinal indigestion, the symptoms being well marked abdominal distension, constipation, nervousness, insomnia, irritability and a general feeling of profound exhaustion.

In this case the treatment was conducted for the purpose of correcting the indigestion and restoring the lime content of the nerve structures, which had been depleted by the persistent acid excess. The pelvic tissues were greatly relaxed and as a matter of course, it was necessary to support and relieve the relaxation, which was readily accomplished by means of the ordinary wool tampon, the patient being instructed to introduce it herself, and to adopt or maintain a suitable position in bed so as to relieve the pressure on the ovary.

As a result of treatment conducted for a few weeks, the demand for an operation has vanished, and the patient became hopeful, less irritable with her children and secured comfortable and refreshing sleep.

REVIEW.

The radical character of the teachings, coupled with the concrete evidences in support of the claims advanced. will affect the reader according to his point of view. A limited number of doctors, who have failed to receive satisfactory results from following the beaten path, as laid down in the text-books, will extend hearty welcome, volunteering to co-operate, by extending the advantages to their patients. Others, priding themselves upon their conservatism and regularity, and above all, their experience, will scarcely give the subject a second thought, claiming that the arguments are pretentious, sophistical and illogical, unworthy of credence, simply because they have never before been presented to the profession. However, it is confidently assumed that a dispassionate study of these questions must lead finally to an impartial decision on their merits, but it will not include those who are handicapped by the peculiar stereotropism incident to tradition.

For the intelligent reader, who is but slightly acquainted with medical terms, it is not difficult to understand the significance between psychic influences and chemical reactions; nor can it be asserted with candor that he is unable to comprehend the importance of alkalescence as a factor in maintaining a normal health standard—and it is a very simple matter to test the saliva with blue litmus paper.

Rest and exercise are considered as merely temporary expedients in the treatment of nervous disorders, because any benefits accruing must be in direct relation with the reactions arising from various chemical changes taking place in the nerve structures themselves, and so long as the physiological basis is unbalanced—by acid excess—such changes are proverbially slow, and at best uncertain.

Studying the forms of invasion, or the peculiar types of involvement, when acid excess leads to abnormal deposits of magnesium salts with consecutive or coincident depletion of the lime content, the classification is simple, practical, and withal, in accord with scientific research. Further, it is amply confirmed by clinical observation and medical treatment, so that "he who runs may read." Indeed, when one is able to comprehend the motor and sensory function of nerves, he can easily and readily determine whether one or both sets are involved—just as a merchant or banker can tell when his telephone connection is interrupted. Magnesium insulation is quite as effective in hindering the transmission of nerve impulses as the "grounding" of a telephone wire inhibits transmission of the human voice, because electricity is the energy responsible for both.

The plans relating to treatment are given sufficiently in detail in the recorded cases to enable any physician of ordinary intelligence to take up with the suggestions without unnecessary delay, these being typical cases in the disorders mentioned, always provided, of course, that these special methods are faithfully adopted and not engrafted upon the routine and traditional methods in vogue.

ANTHROPICAL GENERATIVE FEMININE ANATOMIC PECULIARITIES.*

BY C. C. MAPES, COVINGTON, KENTUCKY.

PART II.

Complete congenital absence of the vagina is an uncommon anomaly, yet a great many such instances are on record. Baux refers to a girl of fourteen in whom "there was no trace of fundament or of genital organs," and Oberleuffer also speaks of a case in which the vagina was entirely absent. Vicq d'Azir is accredited with having seen two females each of whom having no vagina copulated regularly per urethram. Bosquet describes a girl who had an obliterated vulva with complete closure of the vagina, and similar examples were observed by Clarke and Amusset.*

Griffith cites a case in which there existed no vagina, the pelvis possessing male characteristics, and Duncan mentions a similar instance in which the vagina was not more than one inch in depth.

Ferguson saw a prostitute of eighteen whose labia were well developed, but there was no vagina; coitus had been practiced per urethram. Hulke records three examples, (1) congenital atresia vaginæ in a girl of twenty, menstruation occurring through the urethra, (2) atresia vaginæ with hernia of both ovaries into the left groin in a female of twenty, and (3) imperforate vagina in a girl of nineteen.

Brodhurst cites an instance of absence of the vagina in a girl of sixteen who at the age of four showed signs of approaching puberty; at this early age the mons veneris was covered with hair; at ten the clitoris was three inches long and two inches in circumference; the mammæ were well developed; the labia descended later-

*Complete congenital absence of the vagina is also mentioned by Carter, Polaillon, Curtis, Worthington, Hall, Hicks, Moliere, Patry, Dolbeau, Desormeaux, Gratigny; and, according to Churchill, by O'Ferrill, Gooch, Davies, Boyd, Tyler Smith, Hancock, Coste, Kluysens, Debrou, Braid, Watson, and several others. C. C. M.

ally and expanded into folds resembling the scrotum. Azema refers to a case of complete absence of the vagina; Berard mentions a similar deformity in a girl of eighteen, and Gooding cites a case of absent vagina in a married woman.

Gosselin reports a case in which a voluminous tumor was formed by retained menstrual fluid in a woman without a vagina for whom an artificial vaginal opening was created. Balnade cites a case of absence of the vagina in a girl of eighteen; Azam, Bastien, Bibb, Bovel, Warren, Ward, and others record similar instances, and in several cases all the adnexæ were absent, even the kidneys and bladder being malformed.

Spruill relates the case of a woman of twenty-two in whom there was a vagina not more than one inch in depth. The external genitalia presented a normal appearance, the mons veneris and labia being well developed. Having in mind an imperforate hymen the labia were widely separated and gentle force applied, the vagina proving to be but a small cul de sac.

Bullitt gives the history of a young woman who had never menstruated in whom investigation revealed entire absence of the vagina; the urethra was normally situated, but there was no vaginal orifice, the vagina terminating in a shallow cul de sac. Garcin speaks of a slightly anemic married woman of twenty-two who had never menstruated in whom the vagina was absent. The urethra undilated would easily admit the thumb and index finger, sexual intercourse having been practiced per urethram.

Stewart cites the history of a case somewhat similar to the foregoing in a married woman of twenty-eight. Todd describes a physically well developed woman of twenty-four who had never menstruated; inspection showed less than ordinary prominence of the mons veneris, and both the greater and lesser labia were imperfectly developed, having the appearance of a girl of thirteen. The meatus urinarius appeared normal, the vaginal orifice was smaller and less elastic than usual, no hymen present. The vagina proved to be two and a half inches in depth and terminated in a closed sac.

Samuel records the case of a married woman who had no vagina although markedly developed in other respects, the mammæ being of normal size, and where the vagina should have been there was a slight depression not over one inch in depth into which opened the urethra.

Bloom mentions an instance in which a girl of twenty-three was totally undeveloped sexually, all the genitalia being infantile in character. McCann records a case of rudimentary vagina, one and a half inches in depth, and also another case in which there was entire absence of all the generative organs, both external and internal.*

A case of complete absence of the vagina is recorded by Leach, and Suavelle refers to a woman of twenty-two who had been married two years, sexual intercourse had been painful and followed by hemorrhage, her pelvis was infantile and she had no vagina. The clitoris and labia were normal, the urethra enormously dilated, easily admitting two fingers, caused by copulation per urethram.

Boursier cites a case of congenital absence of the vagina in a woman who had never menstruated, and Eberlein saw a woman of twenty-three married five years who since the age of eighteen had suffered vicarious menstruation, periodic nosebleed, and other discomforts. There was complete absence of the vagina and consequent inability to cohabit.

Ladinski records the case of a woman of twenty-six whose pelvis and vulva were poorly developed and the labia small. The introitus vaginæ was but three-fourths of an inch in diameter and one-fourth of an inch deep. Wright saw a girl of eighteen whose vagina was but one and a half inches deep ending abruptly at the apex, the surface eroded but the walls smooth, i. e., there were no rugæ. There was no other abnormality.

Mehrer speaks of a woman with rudimentary vagina, and Clapham saw a girl of nineteen whose vagina was but two inches deep and closed at the upper end. Lewers refers to a girl of seventeen with complete absence of the vagina together with other anomalies of development.

Withrow observed a woman of forty-six who had never menstruated and whose vagina terminated in a blind pouch into which no cervix projected. In another case mentioned by the same author a married woman of twenty-three had never menstruated; her vagina was represented by a cul de sac one inch in depth which had been considerably distended by repeated attempts at sexual intercourse.

Tuttle speaks of a woman of twenty who had a rudimentary vagina, otherwise perfectly developed; a similar case was seen by Dorland in a girl of nineteen whose vagina was one inch deep, and Faidherbe mentions a case which is practically a duplicate of the one immediately preceding. Mond was consulted by a woman of forty on account of absolute amenorrhea. Inspection demonstrated complete absence of the vagina, nor could a trace of uterus or ovaries be detected. Milne observed a woman of thirty-four married two years who had never menstruated and in whom no vaginal opening could be found. The urethra was markedly dilated caused by sexual intercourse.*

Instances of duplex vagina have been many times encountered, examples of this peculiarity being mentioned by Bartholinus, Malacarne, Asch, Meckel, Osiander, Purcell and others among the older writers. In modern times records of this malformation are even more frequent. Hunter cites a case of labor at the seventh month in a woman who had a double vagina. Atthill

*Goldspohn, Barrett and others record examples of total absence of the internal generative organs in Surgery, Gynecology and Obstetrics, 1908. In Barrett's case there was also absence of the vagina. C. C. M.

*Since the completion of this paper Cunningham records a case of hermaphroditism (?) in Surgery, Gynecology and Obstetrics (February 1909): A girl of fifteen had never menstruated, distinctly feminine appearance, mammæ well developed. Local examination revealed two glands, one in either inguinal canal, a slightly enlarged clitoris, labia majora much larger than normal in girl her age. Further investigation under ether resulted in the following findings: a gland, size and shape of normal testicle, in each inguinal canal; the left one could be returned into the abdominal cavity, but the right gland could not be thus returned; each gland could be pushed down into the upper part of the corresponding labium majus; the labia majora were over-developed, nymphæ underdeveloped, just a trace of hymen; clitoris 3 cm long, urethral orifice in normal position for female. Vagina 15 cm. long ending in narrow funnel-shaped canal, no trace of cervix; uterus entirely absent; ovaries likewise totally absent. The author remarks that this case undoubtedly comes under the classification of regular androgynoides, where "the external genitals are of the feminine type and well proportioned; ovaries are replaced by testicles which are found in the abdominal cavity or the inguinal canal. These women (so-called) preserve the feminine appearance throughout life." (Edgar). C. C. M.

and Watts speak of similar examples. Robb mentions double vagina in a woman of twenty suffering from dyspareunia. The vaginal orifice was contracted and the urethra dilated having been used for coitus. Double vagina is also recorded by Anway, Moulton, Freeman, Frazer, Haynes, Lemaistre, Boardman, Dickson, Sunoyer, Rossignol, and others.

Pean performed a successful operation upon a young girl who suffered from incontinence of urine caused by the presence in her vagina of a supernumerary bladder and urethra. Examples of this description are extremely rare, and when they do occur it is more uncommon still to find them amenable to art.

Consolas attended a primipara of twenty-eight in whom on delivery there were found two vaginæ each leading to a cervix. The left cervical canal was dilated with the amniotic sac, the right being closed. Delivery was accomplished with the aid of forceps without complication. Later a second pregnancy occurred, and in this the left uterus was found empty the right being the seat of impregnation. In neither delivery was the septum torn that divided the two vaginæ. Batchelor cites two examples of double uterus and double vagina, in one of which there occurred retention of menstrual fluid and rupture of both vaginæ.

Wilcox saw a primipara three months pregnant who had a double vagina, Haller and Borellus have also seen duplex vaginæ and in one case a double vulva. Sanger speaks of a supernumerary vagina connecting with the normal organ by a fistulous opening.

Cullingworth cites two instances in which there were transverse septa of the vagina, and Stone records five similar cases. Three were young women who had never borne children nor suffered serious injury, and pregnancy existed in each case. In the first the septum was about two inches from the introitus, and contained an opening one-half inch in diameter; menstruation had been normal up to date of impregnation. The second and third cases were practically duplicates of the first with a few minor exceptions. Scott has observed two similar examples, and several other writers mention one case each.

It sometimes happens that the vagina opens abnormally, e. g., into the rectum, the bladder, the urethra, or upon the abdominal parietes. Rossi refers to a young married woman having an enormous tumor corresponding in location to the vaginal orifice, but no trace of the vagina could be found. When the enlargement was incised it was found to contain a living infant. The husband stated that he had practiced rectal coitus without difficulty. Investigation revealed that the vagina opened into the rectum and impregnation had thus been accomplished. Bonnain and Payne have observed analgous instances of this abnormality of the vaginal opening with subsequent accouchement by the anus in which rectal coitus had been satisfactory.

Le Fort collected a number of cases where the vagina opened upon the abdominal parietes, but such anomalies must be comparatively infrequent.

Total congenital absentia uteri has been noted on numerous occasions in both ancient and modern times. This anomaly, however, is more often than otherwise associated with absence or malformation of other of the genital organs. Lieutaud and Richerand are each said to have dissected female subjects in whom neither uterus nor its adnexæ were found. Deficient or defective uteri are mentioned by many of the older writers. Bosquet describes a girl of twenty with a triple vice of conformation,—an obliterated vulva, closure of the vagina, and absence of the uterus,—and who menstruated from the gums. A somewhat similar example observed by Clarke was authenticated by necropsy.

Balnade saw a girl of eighteen who, in addition to other genital peculiarities, had no uterus; and analgous instances are recorded by Azam, Bastien, Bibb, Bovel, Warren, Ward, Boyer, Le Fort, Calori, Pozzi, Munde, Strauch, and others.

Phillips speaks of two sisters (both married) in neither of whom could even a rudimentary uterus be found, and Sedgwick claims to have observed congenital absence of the uterus in three out of five daughters of the same family, two of the three having been twice married. Griffith describes a case in which the uterus was absent, and Ferguson mentions a similar instance in a girl of eighteen.

Burrage records an example of congenital absence of the uterus, and Hulke mentions the case of a girl of nineteen whose uterus was totally undeveloped; Brodhurst and Bernard cite similar instances in girls of sixteen and eighteen, and Spurill reports the case of a woman of twenty-two whose uterus was totally absent. More recently analgous cases have been recorded by Bullitt, Garcin, Stewart, Todd, Samuel, Frank, Bloom, Harlan, Leach, and McCann. Examples of deficient uteri are reported by Ramage, Suavale, Boursier, Eberlein and others.

Ladinski cites the case of a woman of twenty-six in whom the uterus was congenitally absent, and Wright saw a girl of eighteen who had no uterus,—Mehrer, Jacobi, Tuttle, Faidherbe, Dorland, and Milne, have also observed instances of complete absence of the uterus.

The history in the majority of cases of congenitally absent or markedly deficient vaginæ and uteri is substantially the same, viz: The woman is usually otherwise normally developed physically and has enjoyed good general health, but in rerum naturæ menstruation in most instances has never been established. As a rule the labia and mammæ are of normal size and conformation, and oftentimes on casual inspection the appearance of the external genitalia present no indication or even suggestion of the existing internal deficiency or peculiarity. The woman more often than otherwise seeks medical advice not because of a suspicion on her part that there may exist any anatomical deficiency or physical peculiarity, but on account of complete amenorrhea which a long course of domestic and drug treatment has failed to overcome; thus it is usually by accident that the real cause of the trouble is discovered. And when professional aid is invoked, if the patient be a virgin, in the absence of adequate indication for resorting to vaginal examination, the genital peculiarity may be permitted to pass unobserved for several years, in fact until there supervenes some intercurrent pelvic or abdominal manifestation which imperatively demands vaginal and bimanual investigation. In many instances such a contingency does not eventuate until after marriage has been consummated, and it is then most likely the husband who discovers that there is something radically wrong with the genital conformation of his connubial partner. And when appropriate physical examination is finally instituted, the pertinent facts are brought to light, i. e., that the woman probably not only lacks an adequate vagina, and uterus, but is more than likely also deficient in ovaries and tubes.

Double uterus, like total absence or deficiency of the organ, has been frequently observed. The extent of the duplication is described by various writers under the euphonious terms: bicorn, biparate, duplex, double, etc., etc., the "varieties ranging all the way from slight increase to two distinct uteri with separate appendages and two vaginæ."

Among the older authors, Meckel, Bohmer, and Callisen, observed examples of double uterus associated with double vagina. In many cases of double uterus and cervix, however, but a single vagina will be noted. Vallisneri gives the history of a woman who had two uteri, one opening into the vagina, the other into the rectum. Morand, Bartholinus, Tiedemann, Olliver, Blundell, and many others cite examples of double uterus. Purcell performed necropsy on the body of a woman who died in the ninth month of pregnancy, and found to the left of the pregnant uterus a second unimpregnated uterus of normal size. Each uterus had attached thereto one Fallopian tube, and there existed but two ovaries.

Quite recently Morrison has reported a case of labor in a woman of twenty-eight with a double uterus and also double vagina, to whom he was first called because of a miscarriage. The examination then made resulted in discovery of the anomaly. In the center of the vagina there was a septum three-sixteenths of an inch in thickness which extended upward beyond the double cervix, and investigation plainly demonstrated the septum between the two uteri. Pregnancy was found to have occurred in the left uterus, the right being unimpregnated. Later, however, the woman became pregnant in the right uterus and was delivered at full term, the vaginal septum being destroyed in the process of labor. Baer and Norris have recorded instances not dissimilar in character where there was a double uterus, in which pregnancy occurred, as have also Macdonald, Litzman, Salin, Sanger, and others.

Wagner reports three cases of labor in uterus septus, and states that conception is not influenced by this malformation. Blume cites an example of double uterus and double vagina with pregnancy in one side.

Hellier describes double pregnancy in a double uterus in a woman of thirty-four. There had been three previous normal labors, and there was no reason to suspect any abnormality of the genital organs. During this pregnancy the uterus appeared unusually large, and the woman complained of abdominal pain and swollen feet. Labor began in the forenoon, and a living female child was born at 5:30 P. M. the placenta following shortly thereafter. The presence of a second fetus was then recognized, but the uterus showed little tendency to expel it. At eleven o'clock P. M. a hand was introduced into the uterus which was found empty. At twelve the woman was again examined and a second os uteri was found above, in front, and to the left of the first, and a second fetal head was just within reach. It was possible to grasp the septum dividing the uteri between the finger on the left and the thumb on the right os. There was no trace of a septum within the vagina. By podalic version a living male infant was delivered from the left uterus. There was nothing to suggest that the two pregnancies were not of the same date. At an examination of the patient a month later it was found that the septum uteri was retracted within the os, and might easily escape notice on simple vaginal inspection; the bifid fundus was obvious.

Paulin records the case of a woman of twenty-five having a double uterus in each of which pregnancy occurred, the infants being born seventeen days apart. Jay operated (for abdominal tumor) upon a woman of twenty-five who had a double uterus, one portion of which contained a three months fetus.

Galle, Hoffman, Massen and Sanger detail interesting accounts of pregnancy in double uteri, and Ross cites a case of triple pregnancy in a double uterus. Cleveland describes discharge of an anomalous decidual membrane during pregnancy, probably from the unimpregnated half of a double uterus. Pregnancy with a double uterus is mentioned by Hollander, also by Bebierre, Voight has seen a triple uterus, and there are several older parallels on record. Thilow cites a case in which the uterus was divided into three small portions.*

There are on record but few examples of congenital absence or deficiency of the ducti Fallopii. Of course at first thought it might be inferred that where the ovaries are lacking, the tubes would necessarily likewise be absent; but such hypothesis is not always borne out by the facts. A woman may possess normal ovaries without oviducts, and vice versa.

Blazius cites an instance of deficient Fallopian tubes, and Blot observed a woman of forty in whom there was a rudimentary ovary with absence of the tube on the corresponding side.

Doran records an example of multiple Fallopian tubes, and Richard claims several varieties of such abnormality have been noted, that such tubes are sometimes found fused or adherent to the ovary or uterus. Fabricus records an example where the oviduct opened into the rectum.

Lejars reports a case of congenital atresia of the left Fallopian tube in a girl of seventeen. On the right side was a pyosalpinx and ovarian cyst adherent to the omentum and fundus uteri. The left tube, ovary and border of the uterus from the cervix to the cornu, had the appearance of a band of tissue attached to the cervix

*Since the preparation of this paper, the following abstract appeared in Surgery, Gynecology & Obstetrics (February 1909): *MULTIPLE PREGNANCIES IN DOUBLE UTERI, WITH REPORT OF A CASE OF UTERUS DIDELPHYS CONTAINING A SIMULTANEOUS FULL-TERM PREGNANCY IN EACH UTERUS.* C. F. Jellinghaus. Bulletin of the Lying-in Hospital of the City of New York.

Jellinghaus divides these cases into two classes; the first where there is an external indication—in this he includes uterus didelphys and uterus bicornis,—and the second class, in which there is no external indication, and in this he places uterus bilocularis. He reports a delivery of twins from a uterus didelphys, one child being delivered by high forceps, the other by low forceps. One child weighed 2,400 gms., the other 2,000 gms., and both were alive and well when they left the hospital on the fifteenth day with the mother. Jellinghaus has collected from the literature 52 cases (including above) of a similar nature. He finds that in double uteri one twin pregnancy comes in every twelve births, therefore that the percentage of twin pregnancies is much higher in double uteri than in normal uteri. "The multiple pregnancy is most likely to occur in didelphys and least liable to occur in bicornis." "Multiple pregnancies are much less liable to go to full term in double uteri than in normal uteri. Multiple pregnancies in double uteri are less liable to go to full term than single pregnancies in double uteri. On the other hand, if one twin aborts in a normal uterus the other rarely goes on to full term. In double uterus this is much more liable to happen." "Didelphys is most likely to go to full term on both sides, septus least likely to go to full term." "Septus is most likely to abort on both sides, didelphys least likely." Of the 56 cases, operative interference was mentioned in 19. Two deaths in 52 cases, one of sepsis, one of ruptured uterus. (Grulee). C. C. M.

at one end and at the other to the wall of the pelvis, well separated from the fundus. The structure was distinctly fibrous in character and terminated in a small pavilion near which was a minute microcystic ovary. Microscopic investigation of the tube showed that it was impermeable except for a short distance at the fimbriated extremity. It is claimed by the author, and probably correctly, that this peculiarity was clearly the result of developmental error, the cord-like body referred to evidently being that part of the left Mullerian duct which normally forms the Fallopian tube and left half of the uterine body.

An instance of congenital atresia of both Fallopian tubes is recorded by Doleris in a sterile married woman of twenty-eight who showed no other abnormality, and whose general health had always been excellent. Medical advice was sought because of the sterility and severe periodic pelvic pain. The uterus was normal in size, retroverted, but not fixed; appendages enlarged, prolapsed, non-adherent. Muscular coats of left tube thickened and hard near uterus; 3.5 cm. from uterus the canal was abruptly constricted rendering the tube impervious, walls thin and soft; distal to this the tube was enlarged to size of walnut. For a distance of 3 cm., beginning 2.5 cm. from the uterus, the right tube was much thinned and impervious, in fact macroscopically no trace of the tube could at this point be determined, but beyond it appeared normal. The abnormality was regarded as one of congenital error of development, rather than an acquired deformity due to previous inflammatory processes.

Krusen communicated to the Philadelphia County Medical Society a remarkable case of ruptured tubal pregnancy with three fetuses in the second month. The only similar case he could find was reported by Sanger, and was a twin interstitial pregnancy with a third ovum at the fimbriated end of the same tube; but Krusen's case was a true unilateral triple tubal gestation, the course of the uterus not being involved.

Henrotin and Herzog report one of those rare instances in which an ectopic gestation occurs in a diverticulum or accessory Fallopian tube. It is well known that diverticula are not infrequently found in the walls of the Fallopian tube, and a few cases have been recorded in which the aberrant ovum has become fecundated and gone on to greater or less development in these tubal pouches. While some writers have considered that these diverticula are the result of inflammatory conditions, it seems to be now well established that they are congenital malformations.

McCann observed a tubal twin pregnancy. When seen the patient was exceedingly pale, unable to reply to questions, and with a very rapid and weak pulse. The lower abdomen was distended and sensitive, and a tumor was detected in the left iliac region. The uterus was slightly enlarged. The abdomen was opened, with a diagnosis of tubal pregnancy. The dilated left Fallopian tube and a mass of blood clot about it were removed. On examining the specimen in the dilated tube there was found a cavity occupied by two fetuses. They had separate umbilical cords and were unequal in size.

Total congenital absence of one or both ovaries constitutes an anomaly not infrequently observed, if one may believe the statements which appear in medical history. This anatomical peculiarity, like some of those previously mentioned, is ordinarily associated with other generative developmental errors; but there will be found many exceptions to any rule which might reasonably be formulated,—thus a woman may possess ovaries without Fallopian tubes, uterus, or vagina,—likewise —she may have one or all the latter without the former.

Hunter, Vidal, Chaussier, and others, record typical instances of total congenital absence of the ovaries, and Thudicum at one time collected twenty-one cases of this character. Observations are also published by Morgagni, Pears and Cripps showing that they had noted absence of the ovaries. Cripps speaks of a girl of eighteen who had no ovaries; she neither menstruated nor exhibited any of the signs of puberty.

Lauth saw a woman whose ovaries were rudimentary and who showed none of the principal physiologic characteristics of her sex. In contra-distinction to the foregoing peculiarity Ruband describes a woman with only rudimentary ovaries who was "very passionate and quite feminine in her aspect."

In the anomalous cases already mentioned, recorded by Fergusen, Spruill, Stewart, Garcin, Todd, Frank, McCann, Ramage, Ladinski, Wright, Withrow, Tuttle, Faidherbe, Dorland, and many of the others, in addition to the peculiarities cited in connection with other portions of the genital tract the ovaries were congenitally absent.

Since the careful and painstaking researches of Biegel, Puech, Thudicum, Winckler, DeSinety, and Paladino, the occasional presence of supernumerary ovaries appears to be an incontestible fact, although vigorously disputed by some of the older writers. The original hypothesis was that (supposed) supernumerary ovaries (as well as supernumerary kidneys) were simply segmentations of the normal organs and connected therewith; but more recent reports warrant the admission that these anomalous structures are separate and distinct organs.

Sippel records an instance of third ovary; Mangiagalli found a supernumerary ovary in the body of a still-born child, situated to the inner side of the normal organ. Winckel discovered a large supernumerary ovary connected to the uterus by its own ovarian ligament. Klebs found two ovaries on one side, both consisting of true ovarian tissue, connected by a band three-fifths of an inch long.

Displacement of the ovaries into the pouch of Douglas, the vaginal wall, the rectum, etc., has been known to occur. Munde, Barnes, Lentz, Madden, and Smith, report such anomalies; and Cloquet describes an inguinal hernia of the ovary in which the uterus and Fallopian tube were also found in the inguinal canal. According to Debierre, Puech collected eighty-eight cases of inguinal hernia of the ovary, and fourteen of the crural type, and adds that Otte cites the only instance on record in which crural ovarian hernia has been found on both sides.

Keiffer relates the case of a woman who had a tumor in the right groin. It looked like a hernia, but on palpation felt unlike either an enterocele or an epiplocele; indeed, it simulated a collection of inflamed glands. Operation exposed a hernial sac adherent internally to a mass of fat surrounding a firmer body,—in fact, an ovary enveloped in thickened omentum. The displaced organ was removed, the omentum resected with sac, and the crural canal closed. The ovary was the size

of a large almond and extremely sclerosed; it contained some atrophied corpora lutea and a follicular cyst the size of a pea. The patient had felt increased pain in the hernia, with swelling and redness, during each menstrual period.

For much of the data herewith presented concerning the older examples of generative feminine anatomic peculiarity cited, the writer wishes to acknowledge his indebtedness to the volume on The Anomalies and Curiosities of Medicine compiled by Doctors Gould and Pyle, of Philadelphia, Penna., and published in 1896. The additional data have been abstracted from available medical, surgical and medico-legal literature; and the writer desires to express his sincere thanks to both authors and publishers for the privilege exercised in excerpting, epitomizing and reproducing the material.

THE POTENTIAL EDUCATIONAL INFLUENCE OF HOSPITALS.*

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A DISCUSSION of the educational influence of hospitals would be lacking if the possible were not blended with the probable and the existent influences. At the present time the full expression of educational force is to be found in very few hospitals, but the reason therefore is that the necessity for educational work has only recently been brought home to the controlling spirits of our hospital systems. It is unfair to criticize medical institutions that progress slowly along educational lines, because the whole problem as it relates to hospitals is of too recent origin to have permitted great advances in all directions by any single institution. Advances have been made by various hospitals. Some few have developed remarkably along a particular line. As a whole the hospitals may with all fairness be said to be entering upon a career of educational usefulness that will enable them to be more valuable to the community than ever before. What is the potential educational value of the 6,000 hospitals in the United States?

The higher the standard of training of the medical profession the better for the community. No one doubts that there is untold gain to the recent graduate of a medical college by a period of service in a well established hospital, no matter how few beds it may contain. The average hospital in the United States contains about 43 beds. The small hospital therefore represents the type to which most men give their time and skill for further experience and training. The training of the internes is however not the only service of the hospital service. The attending staff receives a constant succession of lessons through the daily contact with a larger number of patients than the average man in the medical profession. Many of the conditions treated medically or surgically are puzzles that are to be solved only through the careful observation of the internes. While the staff is educating the internes, the internes are frequently raising the standards of the attending staff. As a result the public gains from the better education of both types of men. The development of the technic for the refined laboratory methods and the interpretation of the results of the laboratory workers improves the grade of hospital trained practitioner.

The present attitude of the community is to look to the hospital for the supply of nurses. The trained nurse, so-called, is the product of the hospital. Why must the word "trained" be used before the term nurse? There is no untrained nurse unless the technical use of the word nurse is forgotten. The untrained nurse or the much sought semi-trained or half-trained nurse is merely an attendant with more or less practical experience. The education of careful, scientific, thorough, conscientious nurses is a most important phase of hospital work. The hospital too should help educate the community as to the merits of adequate nursing. Hospitals should not lower the standards of the nursing of a community by sending out pupil nurses and rating them as able to give adequate nursing service. The hospitals must raise the standards for the community in everything that appertains to actual nursing. The particular place that trained attendants upon the sick are to occupy depends upon the hospitals as well as does their training. The type of service that the public requires must depend upon the needs of the community. But when all is said, in case of illness the best nurse is none too good for the invalid. A hospital that assumes the responsibility of a training school for nurses is engaged in a form of educational work that should receive the commendation, support and supervision of the entire body of workers in hygiene and education. A new type of nurse is developing—the social nurse or hygienist—a highly specialized worker in the interest of the public health. The hospital of the future will train nurses to be guardians of health as well as to be the agents of doctors, whose sole function shall be to teach hygiene and to preach health.

Three million seven hundred and fifty thousand patients pass through the hospitals yearly. The average stay is sixteen days. What teaching is possible during so short a time? The maternity wards, the surgical wards, can no practical education be given to their occupants? The greatest loss of opportunity exists in the omission to take advantage of every moment to give patients some advice as to how to live. The training of patients will be of importance in the future hospital. Tuberculosis classes, mothers' classes and special classes of all kinds will center around medical hubs in the hospitals and their out-patient departments.

Social workers are needed to perform various duties among the families of the poor, who form the bulk of the patients of our hospitals. A few institutions possess social workers that have been gotten from the outside, and many make use of untrained persons who appear to be available because of plenty of leisure and abundant means. Instead of this somewhat amateurish method, hospitals should train their own social workers. The question of duty to the community enters into this, for the hospital receives exemption from taxation because of its service to the community. The possibility for service has widened. Let the hospital advance on the crest of the social wave whose force is spent through ever-widening circles of education.

The community as a whole can receive educational advantages other than the benefits derived thus indirectly from the training of various groups of individuals. Hospital bulletins, popular lectures under the auspices of the hospital staff are not impossibilities.

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The relation between the hospital and the public must be close, cordial, mutually beneficial. The fear of hospitals that is all too frequent has its basis in a lack of understanding, in distrust, and at times in the mishandling of patients owing to the failure of those inside the hospital to recognize the fact that the psychology of the sick varies greatly from that of the well. The entente cordiale must be developed through the education of the community.

The Massachusetts General Hospital has begun to train hospital administrators. This is but the beginning of a movement for the proper utilization of all the facilities of a hospital education. The careful training in hospital management, in the purchase of supplies, in the purshase and preparation of foods for the various tables supplied in a hospital will form part of the educational plan of the farsighted hospital. And judging from the frightful examples of hospital construction, some few hospitals might well institute a course in hospital construction. In brief, no portion of the hospital equipment should be permitted to remain unused, if it possesses educational value. There must be a proper appreciation of the necessity of well-trained employees in hospitals, and only hospitals can develop them.

When one contemplates the possibilities of special hospitals for educational work, it is difficult to know where to begin to enumerate the potential activities. Investigating hospitals like the new Rockefeller hospital in New York and the Industrial Hospital in Milan afford the best examples of research along definite lines in the interest of public health. The Industrial Hospital represents a new movement for the education of the community in the relation of various industrial pursuits and an all too numerous group of industrial diseases.

Maternity hospitals have untold potentialities for the dissemination of education among the patients. The care of babies, the aftercare of mothers, baby hygiene, the value of breast milk could all be taught to the women who now go out of the lying-in places with little more than the new babies. The establishment of milk stations and nursing oversight of the children for the first year might well be part of the educational program. The establishment of infant consultations would also be a step in advance, though these might better be in conjunction with a babies hospital or dispensary. The great need that is felt to-day for the training of midwives should be met by using the material of the maternity wards as is done in foreign lands for the instruction of midwives under some system of supervision that will guarantee a more educated and better trained midwife than is to be found in this country at the present time.

Babies hospitals are to be encouraged in an endeavor to educate nurse maids, attendants for institutions for children, as well as the specialized baby's nurse. Here again is another opportunity to get hold of the mothers for the purpose of giving them information as to the proper methods of keeping the youngsters so that they may retain good health. I believe that this sort of knowledge may most easily be spread through the medium of an Infants' Consultation. Special courses should be offered in the hygiene of infancy and the feeding during infancy and childhood.

Similarly I might analyze the potential educational possibilities of hospitals for cripples, incurables, for the tuberculous, for the insane. Summer hospitals, and convalescent hospitals have time to do much that is for the benefit of the patients in the line of lectures, stereopticon views, plays and games, sewing, pasting, and constructive occupational work of many kinds. The fields of educational work that are to be sown, worked and reaped are of wide area. The workers at present are all too few. The future will reveal an enlightened community assisting medical relief institutions in affording to different elements of the community the full measure of information that can be gathered from the equipment and complete staff of the many hospitals.

The educational benefits to be conferred by a properly organized hospital with its dispensary equipment, laboratories, and general staffs fall naturally into four divisions: medical, sociological, hygienic, and occupational.

The community may be the gainer from every research into the etiology of disease, both by the advantage to be derived from the improved methods of treatment and the possibilities of preventing the disease. Prompt publication of the results of hospital experience in the therapeutic procedures is almost invaluable to the great mass of the general practitioners who unfortunately have no hospital affiliations. The devising of new instruments for diagnostic precision, the thorough testing of the laboratory aids that are recommended by workers in the distant fields, the investigation of the value of new methods of chemical determinations, all fall within the scope of the work that a well appointed institution should be attempting. Such remarkable therapeutic observations as are at present being given to the action of Ehrlich's salvarsan speak for the promptness with which modern men calmly and without bias undertake to prove the real place to be occupied by any new medicament suggested for any disease. The third phase of this important medical education lies in the development of the technic for sanitary researches and the decision as to prophylactic measures best adapted for the control of the infectious diseases. There is little question that the greatest economic advantage to be derived from this work of the hospital consists in the reduction of diseases through the determination of the hygienic measures that are usually regarded as the basis of the prevention of the diseases.

At the present time the sociological side of the hospital has not been developeed to a very high grade. Much light can be shed upon the relation of industrial accidents to industrial conditions that are largely etiological factors. Much benefit would arise from the information hospitals could give regarding the effect of alcoholism as a factor in the causation of disease and accidents. If hospitals are public institutions, so-called, although in many instances supported by private philanthropy, their aim should be to assist the public to get the maximum benefits from them. When wage earners are in the hospital and there is reason to believe that the family may require assistance a social worker should be notified that the family may be favored with advice or relief, if necessary, during the invalidism of the bread-winner. The investigating nurse may be of immense educational value directly in the homes that are under observation. Prompt advice given by an intelligent worker capable of teaching home economics and home nursing will frequently prevent further ravages of diseases as typhoid fever, tuberculosis, influenza in educable households. Full hospital statistics, inter-

preted in the light of nationalities, occupations, portion of the city occupied, size of the family, number of rooms occupied and wages would be of inestimable importance to the community for the purpose of securing restrictive or constructive legislation along the line of improving the general public health. These are possible educational features that are scarcely ever considered in the analysis of the work that may be accomplished by hospital authorities.

In the matter of hygiene the education may be personal to the single patient, somewhat general by instructing a ward at a time or at a convalescent institution the entire number of guests may be instructed by a single lecture. To return patients to their homes better able to take care of themselves would add wonderfully to the manifold blessings now conferred upon the community by hospitals. Out-patient services are within the reach of the educational wave at this present moment, but the general run of bed-ridden patients has not been considered as a potent educable mass. Almost every patient leaving a hospital requires further advice or treatment. There is much instruction that could be given while the patient is still subject to hospital discipline. How much good could be accomplished if it were possible to teach patients how to live in the light of their past illnesses or their physical shortcomings. What a lesson might be taught on the subject of protecting the family from the condition or disease from which individual patients suffered. The underlying principles of hygiene as applied to every day life could easily be instilled into the minds of tthe millions yearly passing through our hospitals. What a chance to raise the standard of the personal hygiene of the masses. Under the guise of entertainment, valuable instruction could be afforded even the chronic sufferer. The stereopticon and moving picture machine can easily be utilized to tell the life history of the ever dangerous fly and the needless mosquito, or to give a pathetic plea for clean milk. The lessons in the prevention and cure of tuberculosis might well be dwelt upon for the frail specimens that leave hospitals, all too often to go back to homes that lack in sanitary condition just as much as they lack in food and comforts.

Occupational work has made a place for itself in the educational system as represented by the public schools. In some institutions for the treatment of nervous disorders of a functional type, occupational work has gained a foothold. But every hospital ward that now offers only idleness during convalescence might well study the methods that speak for sanity and psychic comfort. What is more deadly than a lack of occupation. From the merry work with feathers, nuts, peanuts, eggshells for little children the gamut may be run through the more involved cutting and pasting, drawing, water-coloring, embroidering, whittling for older children, to the crocheting, loom work, brass work, leather tooling, etc., that may be allowed to some of the older, stronger and more intelligent patients. Epileptics are given the advantage of training in outdoor occupations, and farm work is now a part of the treatment of many of the patients in institutions for the insane. All this training in occupation reacts to the advantage of the community just as it does to the individual taught. The patient restored to society after a prolonged convalescence would be of greater value to the community by reason of the greater power for constructive work. The greatest problem in the after-treatment of tuberculous patients has been the question of occupation. In fact one of the difficulties that often impedes the cure of this disease is the lack of suitable occupation for the patients. During the cure of a tuberculous man it may be possible to give him a training that will enable him to take up more suitable occupation at the end of his cure, and thus run less risk of a recurrence of the condition. Advice as to the best occupation for the handicapped should be available at every hospital. The man who has just lost an arm needs advice as well as moral support when he starts out to join the workers with whom he can no longer compete. During his convalescence he might have learned to use his single arm with the facility that, without encouragement, it might take months to acquire. The limits of the occupational education possible within the walls of the hospital are only those of the capability and ingenuity of the worker who might be in charge of such a department of hospital endeavor.

In the time at my disposal it has been merely possible to lightly touch upon the educational possibilities of the hospital. There has been no attempt to make the discussion technical nor to fill up the text with the names of various hospitals that are perchance doing one or more parts of the educational work suggested. It would be too arduous a strain on patience to listen to an enumeration of all the possibilities for educaion as they exist in all the types of hospitals. The underlying principle is the same: education is an important part of the work of the hospital. When hospitals come to a sense of realization of their possibilities and duties in the matter of education of the patients and the public, they will be performing a mission that is as conducive to the physical health of the community as the public school system is to its mental development.

230 West 97th street.

THE TREATMENT OF MEASLES.

BY W. C. ABBOTT, M. D., CHICAGO, ILL.

So many reports come to me of the prevalence of measles over the country, in malignant form, that I feel impelled to contribute some data on the modern treatment of this malady. Dr. Ussher, the American medical missionary in Syria, has aroused much interest in calcium sulphide by his remarkable article in the *Medical Record*. He found that saturation with sulphide cured his typhus patients, prevented smallpox for the time as well as vaccination could have done, and wholly prevented or greatly modified the outbreak of scarlatina. The relations of measles with the other exanthemata are so close that we are warranted in suggesting an extention of this method to the morbillous affection.

When any susceptible persons have been exposed to this most infectious of diseases, begin at once to saturate by giving a centigram of calcium sulphide, pure and of full U. S. P. quality, repeated every half hour until the perspiration exhales the odor of sulphurated hydrogen. Do not give this drug during the period of acid digestion, as it will be decomposed by the hydrochloric acid

and give rise to unpleasant eructations. Saturation may be induced well within two days, and maintained indefinitely without the slightest harm resulting to the patient. About three grains *per diem* suffice after saturation has been once induced.

Judging by its effects in smallpox we may expect to find the course of measles markedly modified by this procedure, even to the extent of possibly aborting the attack. If the sulphide destroys the microorganisms no other result seems possible; and that is what its advocates claim. Should this prove to be the case it will be in order to ascertain the limits of this drug's powers by trying it out in the other infectious maladies.

Several times we have been apparently on the verge of a great discovery in the therapeutics of these maladies. A third of a century ago a French physician, Fontaine of Bar-sur-Aube, announced that he had found in calcium sulphide a specific for diphtheria. Many supported his claim and for a time it looked as if the day for this remedy had dawned—but just then antitoxin came in and all else became prehistoric. Several others rediscovered this drug, but the difficulty of obtaining it in proper purity and strength was such that the reports on it proved contradictory. One found it active, another pronounced it inert; and the body of the profession concluded it was a doubtful remedy, too uncertain for dependence. Take a calcium sulphide of full U. S. P. quality and there is nothing uncertain or 'inert' about it, and an energy that will not wait long in establishing itself as a power for good when rightly directed.

As in all infectious fevers, it is wise in measles to remove from the case the element of fecal toxemia. This can be done by the use of calomel and podophyllin, followed by laxative salines; and the latter should be given every day until convalescence is established. The urine should be tested frequently and a careful watch kept on the quantity of urinary solids excreted, as well as the presence of albumin, etc. Digitalin is effective as a diuretic only as long as there is cardiac weakness or low arterial tension behind the oliguria. If the vascular tension is high, veratrine should be pushed, or digitonin given to effect.

The danger-points in measles are the overwhelming onset, the hyperpyrexia, the pulmonary complications, and the occurrence of noma.

When the patient is overwhelmed by the malignancy of the infection or by the enormous number of the invading microbes, she may die within a few hours of the outbreak. For this the remedy is the quick and potent stimulus afforded by glonoin, atropine and strychnine. Glonoin relaxes vascular spasm and floods the brain-centers with blood, furnishing the means of supplying normal functionation. Atropine depends and prolongs this effect and by actively dilating the cutaneous capillaries the blood is withdrawn from the engorged internal vessels and brought in reach of the oxygen of the atmosphere. Strychnine awakens the benumbed nerves and arouses the vital powers to activity, strengthening every function and organizing the forces to withstand the assaults of the invaders. The doses must be very small, for an overdose might add to the depression. Glonoin and atropine of each ¼ milligram; strychnine arsenate ½ milligram; to be given together and repeated every ten to thirty minutes until reaction is established.

We then have to deal with a fever that may go higher than in any other specific infection and yet recovery ensue, excepting only scarlatina. While the latter may exhibit a temperature of 112° measles may go to 109° or even higher. We have no right to expect the human brain to withstand such a strain; and therefore seek to allay it by the use of the defervescents, aconitine and veratrine, steadying the circulation with digitalin. Half a milligram of each alkaloid and a milligram of the glucoside may be given in combination, and repeated every fifteen to sixty minutes according to the need. Veratrine especially unlocks elimination and carries out of the body the toxins that are now known to constitute the principal danger in infectious fevers. If veratrine irritates the stomach while the fever is still very high, the aconitine may be doubled, or gelseminine substituted. The latter is of special value if delirium, convulsions or excited reflex irritability, are present. But as Burggraeve sagely remarked, behind sthenia, asthenia ever lurks; and we must be ready to drop veratrine and substitute strychnine arsenate at the first sign of weakness, continuing the digitalin and aconitine. We thus have two tried combinations, by whose skillful use we are enabled to control and moderate the fever at our will.

No remedy ever displayed such power over the respiratory features of measles as did ipecacuanha. The nausea and vomiting it induced were objectionable, but we now avoid this difficulty by employing the pure non-irritant alkaloid emetine. Of this a milligram should be given as often as the pulmonary symptoms indicate—every half hour in some cases, every one to four hours in others.

I have always dreaded the occurrence of noma, always watched the cheeks to detect the first sign of its development, and never saw a case. Possibly my scrupulous regulation of the domestic hygiene, and the constant use of mild antiseptic lotions for the mouth, may have had some influence in preventing this dangerous complication.

Measles is a malady in which malignancy coincides with destruction of the red blood-corpuscles. In malaria it is believed that arsenic imparts such a protective influence to these cells that the plasmodia do not attack them. The analogy would indicate the wisdom of employing arsenic here also. During fever arsenic is useful as favoring fatty degeneration and resolution of the feebly organized products of the morbid process, hence the choice of the arsenate of strychnine. If the stomach is delicate in convalescence, soda arsenate with quassin should be given before each meal. Copper arsenite is an effective intestinal antiseptic. Quinine arsenate is of value in asthenic fever, and iron arsenate in convalescence.

Finally, measles being a malady in which the protective leucocytosis does not occur, it seems advisable that we should reinforce the body's garrison by giving full doses of nuclein hypodermically each day until convalescence has been established. Sixty minims is the maximum daily dose. No vestige of injury has ever been detected from this remedy, while its value seems well established.

Ed. Note. Pulsatilla should not be overlooked in this affection. In our experience no other remedy is so universally of service.—Ed.

The Treatment of Acute Laryngitis.—Although this disease is usually regarded as a mild one, and does not usually reach the danger point, yet there is so much discomfort to the patient suffering from it, that is should be treated energetically. It should also be remembered that this disease has a tendency towards chronicity in a few cases, and if not stamped out in the acute stage, it will often prove to be a most stubborn one.

The diagnosis of the condition is easy, and is usually made as soon as the patient begins to talk. There is a slight rise of temperature, ranging from 100° to 102° F, hoarseness, partial or complete loss of the power of speech and a full feeling in the throat, or, as the patient very often expresses it, "there is something in the throat which needs coming out." By the use of the laryngoscope the area of inflammation can be outlined and its severity determined. Our first indication in treating such a case is to administer a brisk cathartic, preferably one of the salines, either Epsom or Rochelle salts. These cathartics deplete the system of a certain amount of fluid, and on theoretical grounds, at any rate, should relieve the swollen and congested condition of the larynx. Rest to the voice, while of prime importance, is not always possible. It is always best to explain carefully the reason why rest is indicated, so that the necessity might be well impressed on their minds. They are then as a rule more willing to follow instructions than if no explanation was given. The one particular reason for writing this short note is to call attention to the use of bromides in acute laryngitis. Although its use is mentioned in a passing note in most text books on therapeutics, still it is not one of the remedies generally used. In my own experience with these cases, it certainly has acted much more efficiently and with greater promptness than any other drug. It brings relief quicker and with more certainty to the patient. Large doses of it are given, as much as fifteen grains four times a day. It is particularly useful in allaying the pain and hoarseness. The drug acts by depressing the peripheral parts of the sensory nerves, and after very large doses the motor nerves and muscles are similarly involved. This is just the point which we must try to attain in these cases. By causing a depression of the peripheral nerves of the larynx, it allays the irritation, and gives the circulation an opportunity to relieve the congested condition.

As the cough is merely a symptom dependent on the swollen and irritable condition of the larynx, this drug will usually be found sufficient to relieve this distressing symptom. Other drugs, such as pilocarpin and codeine, have their advocates, but the bromides, preferably the sodium salt, fulfill all the indications.

If the patient can be kept indoors, a useful adjuvant to allay the irritability of the larynx is compound tincture of benzoin. It is placed in boiling hot water (two teaspoonfuls to the pint) and the steam inhaled as it rises from a pitcher, or as it passes from the nozzle of a deep coffee pot. This inhalation should be resorted to six or eight times a day, but the patient must not go out of doors or into a cold room, as the steam relaxes the parts involved and renders them more susceptible to cold. Sometimes advantage is gained by adding to this inhalation one grain of menthol.

With regard to the use of sprays and gargles, some cleansing alkaline gargle is usually prescribed. Dobell's solution answers this purpose. It helps to clear away any mucus that might collect around the epiglottis and low down in the pharynx.

The local application of astringents by means of a swab is advised by some, but I have seen very little good to result from it. In fact they do positive harm in most cases by irritating the membrane and causing a further congestion.

If treated on the above lines, these cases will usually get well in from one to two weeks. However, should dangerous conditions such as œdema involving the glottis and laryngeal structures set in, prompt surgical interference is necessary.

The Phosphorus Metabolism in Rachitis.—Commenting on this phase of the disease, the Medical Record for November 12th says that among the diseases of metabolism rickets is one whose pathogenesis has for a long time baffled clinical observation and laboratory investigation. Apart from a realization that all the vague nutritional errors associated with a poor environment are to a certain extent responsible for this condition, no tangible factors have yet been gleaned to which one could point as the main causes in its evolution. In a most exhaustive series of investigations undertaken with a view of determining the significance of calcium in the pathogenesis of rickets, J. A. Schabad, in his sixth contribution on this subject in the Archix für Kinderheilkunde, Vol. 54, Nos. 1 to 3, has come to the conclusion that the pivotal point in the morbid mechanism of this disease is the metabolism of phosphorus and not calcium. In the evolution of rachitis there is an increased elimination of both of these substances. The increased excretion of phosphorus is greater than can be accounted for by the amount of this substance and the equivalent amount of calcium contained in the bones, so that it is probable that the nervous tissues share in the pathological process. The increased phosphorus elimination is in the feces, while that in the urine is really less than the nomal (hypophosphaturia). The ratio between the phosphorus content of the urine and that of the feces is changed. The normal ratio in nursing infants, 80:20, becomes in rickets 65:35, while in artificially fed infants and in older children the normal ratio of 60:40 is practically reversed to 40:60. In the convalescent period this disturbed ratio of phosphorus elimination is gradually restored to normal, while the total excretion of phosphorus reaches the subnormal. At the same time there is a relatively great increase in the urinary phosphorus, the ratio becoming 75:25. There is a close relationship between the calcium and phosphorus content of the feces; increase in the intestinal elimination of calcium goes hand in hand with a phosphorus retention and vice versa. The interpretation of these results brings out the important fact that, inasmuch as in rickets there is excreted more phosphorus in proportion to calcium, the possibility is excluded that the augmented phosphorus elimination is to be attributed to the increased excretion of calcium. The conclusion is obvious that the primary factor in the metabolic disturbances underlying rickets is to be sought in the increased elimination of phosphorus. These experimental results apparently explain the good effects that have for a long time been observed from the empirical administration of phosphorus in this disease.

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THE DEATH OF MRS. EDDY.

THE medical profession cannot but take an interest in the death of Mrs. Eddy, the founder of Christian Science. Consistent to the last, she died without medical attendance, late in the evening of December 3. In the words of one of her household, "She had been in error about a week and passed away very quietly." The "error," in the opinion of Dr. George L. West, the district medical examiner, was a senile pneumonia. Dr. West, in our judgment, acted wisely in issuing a certificate of death from natural causes, without insisting on an inquest. This opinion will doubtless be opposed, at least on first thought, by members of our profession. With the general dictum that a sick or injured person should have whatever chance of cure or alleviation may be secured by the ministrations of those who have qualified themselves to render such relief by scientific study and practical experience, we are heartily in sympathy. In the case of a child allowed to die without medical attendance, on account of the fanaticism of parents or guardians, we believe that the fullest penalty of the law should be enforced, not in any spirit of malice toward those guilty of neglect according to the general concensus of opinion, but with a view of discouraging such neglect in the future. In the case of an adult, who has reached an age at which discretion has been attained if it ever will be, who has had abundant opportunities to weigh personal convictions, religious or otherwise, against the convictions of others, we are strongly inclined to grant the privilege of following out those personal convictions, however much they may differ from our own.

Dr. West, in his official capacity, might have refused a death certificate without an inquest which latter would, quite probably, have involved an autopsy. Such a procedure, there is no doubt, would have been in opposition to Mrs. Eddy's own preferences; it would have aroused the bitterest enmity of her million adherents and would have led to the charge by them, as well as by many of the laity who are far from being Christian Scientists, of medical prejudice and of a malicious determination to carry persecution to the grave. Such a policy would have placed the entire medical profession upon the defensive and, in the eyes of the people generally, the defense would have been a weak one. In many similar cases, the necessary power of a medical examiner to insist on a formal inquest is waived, when there is no evidence of foul play and, in the present instance, every argument of expediency as well as the warm personal affection and reverence of her followers, render such an idea absurd. Indeed, during the last few years, there have been repeated rumors that Mrs. Eddy was dead and that, as a matter of policy, her death was being concealed.

It is quite in keeping with natural phenomena that a person in the ninetieth year should die. Neither medical skill on the one hand nor the present claims of Christian Science on the other pretend that death, in the ordinary sense, is preventable. As to the presumptive evidence of a pneumonia, it must be remembered that most men and women of 90, or even 80, die *with* if not *of* some form of pneumonia, unless death has been due to some exceptionally rapid process. To insist that no one shall die without medical attendance—excluding, of course, cases of violence and lesions of sudden termination which render the calling of a physician impossible—is a claim that the medical profession itself cannot make with good grace, although we may well hold the view that the benefit of medical skill ought to be afforded and with this view, the vast majority of all persons will agree.

A friend with numerous acquaintances among Christian Scientists has remarked that the medical profession should be charitable in its comments on Mrs. Eddy's life and death, bearing in mind that to her adherents she has been a wonderful woman, if not something more than woman or human. But, in one sense, Mrs. Eddy is more of a wonder to those whom she has not influenced, even to those who regard her life work as insincere, than to her disciples.

Not a few have regarded the whole enormous edifice of Christian Science as the expression of personal vanity and cupidity, entirely lacking in sincerity on Mrs. Eddy's part. If this view be correct, we tremble for the welfare of the race. If, in the most civilized portion of humanity, one human being without even the strength of personal sincerity, can exert such wholesale influence, extending far beyond the limits of personal persuasion and magnetism, and in the face of the opposition and ridicule of all ordinarily constituted authority on every particular of divergence from the common concensus of opinion,

there is no form of sophistry and opposition to law that may not be anticipated.

In the whole history of religion, it is difficult to find a parallel to Mrs. Eddy. She has never directly claimed Divine inspiration to the extent of the founders of the various great religions of the world, although, in the minds of many of her disciples, she has been reverenced in much the same way, and her cult has made progress quite as rapidly as many of these. On the other hand, her attitude has been quite different from that of the avowedly human instruments who, by insistence on some particular doctrine or method, have established sects. Neither can she be compared, except in a loose way, to the ancient prophets. The breadth of her influence, the lack of spectacular and more or less material claim of Divine authority, her appeal to an audience of far greater culture and mentality and vastly exceeding in numbers and distribution the powers of personal contact, remove her from the category of Joseph Smith, Dowie, Jemima Wilkinson and other leaders of communities composed largely of unintelligent members and, indeed, existing mainly before the general diffusion of knowledge characteristic of the period in which Christian Science has developed.

Every branch of human science and every scientist is necessarily judged by men and women who are, individually, incompetent to pass judgment upon the science or the man. Practically every authority on line of logic, religion and medicine has condemned or even ridiculed as beneath contempt the conceptions and teachings of Mrs. Eddy. Notwithstanding, she has received wide acceptance by a following which, speaking broadly, would be expected to be in accord with such authorities. She has accomplished this with almost every conceivable handicap, in regard to lack of education, lack of social and financial prestige, lack of physical vigor, neurotic tendencies, lack of personal magnetism in the ordinary sense, lack of opportunities for exercising control over others, lack of physical attractiveness such as ordinarily marks either the man's or the woman's woman; and her success came at a period of life far beyond that at which it could be expected, according to any precedent. For these reasons, we repeat that her career is more wonderful from the viewpoint of one outside her cult than to one who might ascribe it to a supernatural agency.

Later, we shall endeavor to explain this more than Napoleonic success. For the present, without animosity, we accord the respect which death demands and the admiration which great success inspires.

A Surgical Pasha.—His Excellency, Crookshank Pasha, has recently been "in our midst." An Englishman by birth and a surgeon by profession, he was made a pasha by the Khedive of Egypt in 1890 by reason of several important military positions he has held in that country.

THE LABOR WAR.

IF we were disposed to be a malevolent prophet, we would predict a war, not with our neighbors on the north and the south, nor with Japan across the Pacific, but with the laboring class of our own country. And on the other side of a civil war of this kind there would be not the comparatively small capitalistic class, no race, creed or section, but working men of all kinds and grades of labor, who have no special antagonism with the attacking forces, but who stand for conservatism and who think of themselves as consumers as well as producers.

If anyone thinks the suggestion a bit of sensationalism, let him collect newspaper clippings for a few months. We did this for a while, with the idea of presenting evidence, but stopped because of the very bulk of the matter gathered. "Cornelius Shea, who led riotous strikes of teamsters in Chicago and New York, has been arrested for trying to kill a woman with whom he lived." "Mobs pull strike breakers from their cars (in Philadelphia) and burn cars in streets. One policeman fatally shot." "Dynamiting of $350,000 viaduct between Hoboken and Jersey City Heights." (Three-story tenement with sleeping occupants not 25 feet away.) "Rochester man beaten when his unionism was suspected." "Operative potters will fight for resolution prohibiting all union potters from affiliating themselves with the national guard, regular army or any military organization that would make them liable to be called out to suppress strikers." "Strikers assault and seriously beat non-union driver and special officer" (New York). A scrap book could have been filled with tales of violence along the Great Lakes, at McKee's Rocks and we read of funerals held up because of the presence of non-union drivers of carriages, of celebrations handicapped because non-union musicians were hired after all union bands were engaged and more music was wanted. Within a few days, a dying labor leader has forbidden any national guard man to attend his funeral. In New York, there are uniformed and well drilled regiments, composed mainly of laboring men of a certain nationality, independent of the national guard and in almost every large city there are similar, though less perfect organizations.

In this country, it ought to be impossible to speak of a laboring *class*. Yet we have in many States a legal holiday which, if needed at all, ought to be in recognition of the dignity of any kind of honest work, but which has, by the choice of the very men who should have protested most forcibly against class establishment, been limited not only to certain grades of labor, but to working men with one special political view of the privilege of labor. In the celebration of this holiday, banners are flaunted bearing the device: "No card,

no work." We fail to see how such a declaration can be made without attacking the foundation of our government. It is quite after the analogy of depriving a man of his rights of citizenship and his ability to make a living, by excommunication from the Church and of granting to a hereditary nobility certain powers not enjoyed by the generality of mankind, yet such methods are supposed to have been abandoned years ago.

We are heartily in favor of voluntary association of men of a given occupation, professional or otherwise, to perfect themselves in their work, to secure educational and social advantages, even to increase their material comfort. We believe in the inforced registration of any kind of workers whose labor is of such a kind as to require State regulation in the interest of the community at large. We are inclined to pass lightly over the charge of a narrowly selfish view or of resorting to political methods or of exerting undue influence, on the part of labor organizations. But there are certain limits beyond which no good citizen can see any man or body of men pass, without protesting.

Our title of "Labor War" sounds sensational, but it is an open question whether it is not rather a present fact than a future bugbear. In the last ten years or more, has there been a week when men—and sometimes women—have not been killed or at least seriously injured, on account of labor unions? When men are forbidden to perform the natural voluntary duty of military service because they may be called out against their fellow workers, when officers of the law are killed and citizens assaulted for earning a living or even on the suspicion of working contrary to the dictates of private organizations, when dumb animals are maimed and mourners assaulted or harrassed in the presence of their dead, we have come pretty near a state of civil warfare. Many of our strikes have lasted for weeks, have involved loss of labor by idleness and destruction of property amounting to millions of dollars, have caused deaths and injuries as large as in many military skirmishes. Many have been purely sympathetic. Is it an idle fear by a sensationalist that, some day, the sympathetic strike will assume larger proportions, that there will be more firearms and fewer fists and bricks used, that strikers will stand in straighter lines and perhaps wear garments of uniform cut, and that bosses and walking delegates will be called captains and colonels? Yet these comparatively small items are about all that are needed to make the term Labor War an actuality.

But the point may be raised, why do we consider such a general uprising as possible? First of all, we do not anticipate any sudden danger, but merely the gradual development of present tendencies.

But we regard such a development as logical, unless serious attention is given to the danger, before it assumes too great proportions. In no other country of the world is labor so highly paid as with us. We have reached a wage scale of from $4 to $7 a day for so-called skilled labor, but of a grade requiring no special artistic skill or ability beyond that of the average man. We do not believe that the average wealth of the country equals this demand. Consumers, not directly of the laboring class in the present sense, have gradually been stripped of their savings, or, at any rate, have not been able to acquire wealth as did their fathers. Work has gone on intermittently, according as actual present demand has enabled employers to pay the required wages, and with periods of idleness which have left the laborer with not much greater annual income than before. As a result of high wages directly and of the natural inclination of farmers, physicians and others to increase their income proportionately to the demands of labor, nearly every commodity has increased greatly in price. To put the same fact in the opposite way, the dollar has been debased to about 60 cents, not on the gold basis, but on the more essential basis of food, clothing, rent and heat. With the gradual withdrawing of the wealth of the so-called middle class and the growing difficulty and risk of undertaking schemes requiring labor the laboring man will have increased difficulty in getting even his debased dollars in the amount set as a standard and, moreover, what he wants ultimately is not so many dollars but so much real wealth. Past experience has taught him that he can increase his wages by certain methods, will he realize that the continuance of these methods will not gain what he wants simply because it is not to be had?

RURAL HYGIENE.

CHRISTMAS EVE eleven years ago a former Wellesley president, who had gone for recuperation to her camp in the North Carolina mountains, was stricken with typhoid fever. A trained nurse was sent for from Philadelphia; and Miss Lydia Holman responded, bringing her patient through triumphantly. During her service, this excellent nurse observed from time to time the country folk passing the door of the camp; and presently several of them came to her for the treatment of minor ills. She grew very much interested in these neighbors; until, on the recovery of the patient for whom she had originally been engaged, she returned for settlement work on the East Side of New York City.

Soon, however, there was an irresistible call to return to the mountain folk in North Carolina; and Miss Holman was back at her work in behalf of "our be-

lated ancestors"—for most of these Carolinians are descended of the original white settlers in America.

Recently, in the metropolis, this devoted nurse related the single-handed fight she then undertook and has since, throughout a decade, maintained against filth and disease, in one of the worst counties of the United States, so far at least as the prevalence of crime goes. "Yet in all the ten years in which I have ridden up and down that country I have never been treated with anything but kindness." This work was taken up because Miss Holman concluded there was more need for a trained nurse in the sixty square mile tract which she came to know, than in the most congested block of the most hideous slum. For eight years past she has known how to tend her own horse, do her own housekeeping, and be ready day and night to answer a call for assistance from anywhere, howsoever far, in the hills. She is not only nurse, social worker and teacher of hygiene; she is also physician, although she has no doctor's degree. For it seems that in this primitive region capable medical men are unknown. "In all Mitchell County there are but two medical graduates." The profession in America is undoubtedly much overstocked; it would appear also to be very unequally distributed.

The *New York Evening Post* reports that, thanks to a pernicious law passed by the State Legislature in 1909, there are many illiterate individuals doctoring the people; "but they do far more harm than good." They include in their number two school teachers, a second year medical student, some one who spent six weeks at a Charlotte medical school, two without any reason or excuse for their licenses, and one qualifying under what is termed the "medical grandfather clause."

Such presentments have resulted in the formation of the Holman Association, which has for its purpose the promotion of rural nursing, hygiene and social service, throughout the United States; for it is well recognized that the area which this devoted woman has made her special province is by no means the only Federal territory in need of elementary sanitation. The remote mountain settlements of the Alleghanies, in the Carolinas, West Virginia, Tennessee and Kentucky; the Gulf Coast; and many other States have communities thus destitute. For that matter, one may discern, from the top of the Metropolitan Tower, in New York City, districts but thirty miles away, where "quack doctors are killing mothers and babies, and making strong people invalids." The work of the Holman Association is therefore to be national in scope; and it is hoped that every backwoods hamlet needing its help will ultimately be reached. Its president is Dr. Wm. H. Welch; its treasurer Mr. E. Warfield, of the Fidelity Trust Company, Baltimore; its secretary Mrs. J. C. Bloodgood, of Baltimore.

ARABIAN MEDICINE.

A WONDERFUL necromancer is Father Time. Only the other day he conjured up a picture of Saracenic Medicine ten centuries ago. It was all done in a brief paragraph in the lay press, which related that the Berlin University has conferred the degree of doctor in medicine, *summa cum lauda*, upon Hamed Waly, an Arab sheik from Egypt. This most interesting colleague had passed first through the Mohammedan university in the Azhar mosque at Cairo and the graduate school, the Dar el Ulum. A decade ago this uncommon scholar was sent by the Egyptian government to Berlin in order that he might teach Arabic in the seminary for Oriental languages; and there he devoted his spare time to medical study. Dr. Hamed Waly will, on returning to Egypt, become a sanitary inspector. His dissertation was on the Arabic history of medicine in the thirteenth century—when, it would seem, the Arabs and the Jews were the world masters in medical science and art. It were interesting to consider briefly that period.

After the dreadful Vandalism which wrought the destruction of the Alexandrian library and its medical contents, the Arabians turned to Grecian science for instruction in the practice of healing. Both Hippocrates and Galen were translated into Arabic. Simplicity of thought and of method are almost never lacking in genius; yet precisely for their simplicity were the works of the Father of Medicine less preferred than those of Galen, whose metaphysical refinements and elaborate arrangements pleased the Arabian taste. The successors of Mohammed rested after their conquests; and were disposed to round out their mighty achievements by the cultivation of peaceful pursuits. Nevertheless their great intellectual lights made no addition to general science, other than the invention of chemistry and alchemy, which they introduced into medicine.

The Mohammedan faith excluded practical anatomy in the present day sense; midwifery and gynecology were forbidden men, as is to-day largely the case in the Orient. It will delight our confreres in surgery to know that such practice was considered unworthy of a man of honorable disposition; it was confined only to the "despised lithotomists and persons of the lower class, who in consequence of the fatalism of the Arabians (despite the remarkable tolerance of the Orientals, even to-day, for painful operations), were very rarely allowed to have recourse to the knife.* Such operations as venesection, cauterization and the incision of arteries were not becoming a physician of respectability and consideration; they were suitable for the physicians' assistants only. These latter, in reality the

*Dr. Theodore H. Allen. The History of Medicine. Science History of the Universe.

servants of the medical man, had relegated to them also such other operations as incision of the eyelid, removal of the veins in the whites of the eyes and of cataract (!) Moreover, no honorable physician would impart to the patient any other advice than such as referred to food and medicine.

Medicine proper was chiefly taught; and chemistry, pharmacy, materia medica and the history of medicine were well cultivated. The Arabians were the first to describe smallpox; and they greatly improved drugs, in consequence of their elaborate researches in chemistry.

In the tenth century Avicenna epitomized in one work the conclusions of the Greeks; and this was until modern times the civilized world's text-book and laws of the healing art. Anatomy, physiology and materia medica received consideration; camphor, iron in various forms, amber, aloes, manna and many other drugs were detailed; gold and silver being considered "blood-purifiers," gilded and silvered pills were held to be especially efficacious. Those among us who are amused by such a perversion of logic should recall the great market value attained in our time by "pink pills for pale people;" this is just Avicenna's reasoning brought up-to-date.

Avicenna wrote much of nervous diseases; he considered tic douloureux, measles, tetanus, and the three forms of inflammation of the chest (pleuritis, muscular rheumatism and mediastinitis). He is said to have been the first physician to teach the contagiousness of phthisis. He distinguished fifteen kinds of pain; in great coldness and great heat he gave no medicines, and considered that a remedy good in one locality would be injurious if employed in another. In surgery Avicenna wrote of cataract extraction as a dangerous operation, as well he might have; he would do no operation on strangulated hernia (and must have lost many a patient in consequence); he described puncture of the bladder, the method by which foreign bodies might be removed from the gullet, hardened wax from the ear, and the like; he preferred to loosen the teeth by means of the fat of tree toads, rather than to pull them out.

Albucasis, later in the same century, had no foolish pride; he was as great in surgery as Avicenna was in medicine. He did not scorn to venesect, opening the vein on the sound side; he recommended this practice as a prophylactic. Thus he was instrumental in perpetuating a custom on the whole pernicious, by reason that veins were opened as a routine procedure, and quite without consideration of its propriety or necessity.

Albucasis was familiar with gangrenous epidemic erysipelas, warty excrescences, fractures (which he rectified by the heroic use of machines); he valued anatomy as essential to the practice of surgery—a bold position in an Arabian at that time.

The celebrity of the Arabian school of medicine seems to have been based, not on its essential merits, but by reason that the rest of civilization was in a much lower state of medical knowledge. Europe, from the eighth to the twelfth century was, as regards natural science, almost completely immersed in superstition. What remained from the Ancients of a taste for literature, the fine arts and science were cherished in the Middle Ages by the Moors and Arabs; and it was from this source by the intervention of the crusaders, and the intercourse thus effected between Europe, Asia and northern Africa that the Ancients again came into their own, especially in Italy and France. The study of Greek was generally suspended in Europe during the Dark Ages and it is possible the works of the ancient Greek physicans might have been entirely lost to us, had the Arabians not preserved them in translations.

Pasteurization.—At a recent Conference on Milk Problems held under the auspices of the New York Milk Committee, Dr. Ernest J. Lederle, the Commissioner of Health of New York City, stated the greatest problem before his Department is to give the metropolis a *safe* milk supply. "Certified" and "guaranteed" milk need no defense; such milk, from tuberculin tested cows, handled by persons free from disease, bottled on the farm in sterilized containers, kept cold, delivered fresh, and having a minimum of bacterial content, is reasonably safe milk. Certified milk, however, represents less than 1 per cent. of the total supply of milk for the metropolis; the problem is to make the remaining 99 per cent. of the supply reasonably safe. This supply comes from forty-four thousand farms in six states, from points ranging 50 to 400 miles from the Borough of Manhattan. There are but 33 inspectors detailed to the regular inspection of these dairy farms, supplying the 1,000,000 quarts of milk shipped daily to the great city. The dairies where less than 50 per cent. of the sanitary requirements exist are excluded. Knowing and realizing all these factors, Dr. Lederle recognizes the duty to make this vast milk supply safe and to protect it from these many factors of contamination by careful and perfect pasteurization. The duty of his Department, in its relation to the milk supply, has to do mainly with the death rate, especially among infants. The milk supplies outlined above give the option of two safe supplies for babies' use; and Dr. Lederle asks publicity for the following statement: "Milk safe for babies must be grade 1—certified or guaranteed milk, which may be fed raw; grade 2—pasteurized milk; and further that safe pasteurized milk for babies should be milk produced on farms where at least 75 per cent. of the sanitary requirements have been complied with. Such milk should not contain more than 100,000 bacteria per cubic centimeter before pasteurization, should be heated to at least 140 degrees Fahrenheit for at least twenty minutes, and should not contain more than 10,000 bacteria per cubic centimeter when offered for sale."

BIBLIOGRAPHICAL

Gorton's History of Medicine*—Philosophical and Critical.—The labors of compositors, proof-readers, and publishers of Dr. Gorton's History of Medicine having been closed, the work issued, and the critics in part having pronounced judgment upon it, the author begs the privilege, by the courtesy of the New York MEDICAL TIMES, of making a few observations, explanations, and acknowledgments, not for any errors of omission or commission which may be found in its pages, but to express his appreciation of the excellent services that all have rendered the work, and the cordial appreciation with which it has been received by the profession.

Furthermore, he wishes to say through the kindness of a friendly reviewer, a few words in respect of the plan and scope of the work: "The author maintains that no history fulfills its just function and usefulness that is confined to a narration of events dissociated from their significance; that writers of history should deal with the evolution of events, their causes and sequences, and incidentally only of individuals and actors in the evolutionary drama. In this case he has sought to unfold the evolution of medicine, and to point out causes that have obstructed its development."

These are the words of the author. No one will deny that the student of history as a writer is in a position to assist the novice. His position is that of a teacher, and the readers are his pupils. It is hardly consistent with his function to be blind and deaf to the merits of his subject; or to be indifferent to their bearings. If the author of these volumes has succeeded in consistently adhering to this plan and policy of writing medical history, he need not be disturbed by any criticisms that he may receive. He insists that it is wholly consistent with a non-partisan judicial temper to sit in judgment upon the merits or demerits of absurd and irrational dogmas, conceits, doctrines or systems that come under a review in a medical history that pretends to be critical.

To these observations the reviewer may reasonably contend that such a course would be likely to pervert the truth of history by the interjection of bias, or partial, or prejudiced opinions held by the author, and thus to mislead the uncritical reader. The justness of this criticism is supported by many examples among historical writers. The best types of the historian have been the cold, passionless, indifferent narrator of events, such as Gibbon and Hume; the poorest types may be found among the rhetorical narrators, who would sacrifice the truth of history for the sake of turning a period, as Macaulay and Froud. On the other hand, it should be borne in mind that no writer is infallible; that he is the most likely to be fallible who writes without a philosophical concept of the *raison d'être* of the course of events which the historian traces and records. No author aspires to the distinction of being infallible. And we agree with Dr. Gorton in declaring that he who assumes the rôle of infallibility is a pretender and a fake. If a writer's logic is at fault it may be passed in silence with blunders of rhetoric; but if his facts are false a thousand critics stand ready to point them out. Victor Hugo has said that history is a tissue of lies (or words to that effect). There is a good deal of truth in the remark; it is especially true of ancient history, written before the days of pen and paper, stenography and other conveniences accurately to transcribe events which go to make up history.

In this work, to paraphrase briefly from the prospectus, the author presents a comprehensive review of the origin and development of the science of medicine. Starting from the legendary age, long before the dawn of science, when curative means and methods were inspired by the commonest sense, the origin of which was Instinct, he traces the history of the art of healing through the centuries to the present day; setting forth the principles upon which it is based; discussing freely, but without prejudice the theories and hypotheses of the many different schools by which it has been directed or influenced; showing the influence of medicine and of the related sciences upon civilization; and giving brief sketches of the men—both ancient and modern—whose work helped to shape the course of its history. The most revolutionary views of the author are those relating to the source of healing. The Christian Scientist will, we fear, derive much comfort from the conclusions at which he arrives. The ancients referred that power to Instinct, and the origin of Instinct to God or the gods. The author undertakes to show in the Prologue of the work what justification primitive men had for such a conception. He is supported in his contention, however, by all the great masters of thought since Hippocrates, unless it be Samuel Hahnemann.

While the work is addressed more particularly to the medical profession, it will appeal also to students generally, because the history of medicine is largely the history of civilization.

The "History of Medicine" of which we are writing, has involved large expense and labor—a fact which forcibly impresses the reviewer at the outset. No one but a publisher of large experience can have an adequate idea of the labor the author must needs give to such a work. It would be idle to expect a money compensation for this outlay of time and toil. The labor of getting the material and putting the manuscript into form is no inconsiderable task. But a task equally onerous is to follow. When the work is taken in hand by the publishers a sharpwitted critic is assigned to it whose business it is to question every fact or statement about which there is a shadow of inaccuracy. As the printing proceeds, the margins of the galley-proofs are often covered with interrogation points, and lines of red ink drawn around questionable grammar or phraseology, sometimes to the author's utter bewilderment, often necessitating a "still hunt" for references and authorities to find which may take hours. Of this no author makes complaint. On the contrary, he welcomes it, and feels under obligation to the critic for it. The excellences of his pages are largely due to these critcisms. And all this, be it observed, is apart from his own pruning, correcting, amending, transposing, rephrasing and otherwise preparing his paragraphs, the better to fulfill the expectations of the publishers and merit the approbation of his critical readers. In this matter the reviewer speaks from experience.

In other respects the work before us is an expensive

*The History of Medicine Philosophical and Critical, two octavo volumes. Illustrated. By David Allyn Gorton, M. D. Published by Messrs. G. P. Putnam's Sons, New York and London

one. The style in which it is gotten up, typography, illustrations, the manufacture, etc., have required skilled labor. The vignettes which accompany the work are rare, at least many of them, and have involved considerable expenditures. They are worth to the connoisseur of books many times the price of the volumes. The publishers have spared no pains on its pages, as the reader readily sees.

As to the intellectual value of the work critics may differ, of course, according to their point of view. Be that as it may, the author has put his best thought in the work, supported and illuminated by the best thought of the best thinkers. He has dared to question the questionable from whatever source, or however hoary with age and venerable it may be. It is too much to expect that his views would be generally received. As to that he is willing to wait the leavening principles set forth in his paragraphs. Time is fleeting, it is true; but eternity is long. He can wait. Like wine, they may improve with age and grow in appreciation with the years. Le Clerc's great work on the same subject, the last edition of which was published at Amsterdam in 1723, has increased in price-value manifold. It is now out of print and rare. One hundred dollars would not buy a copy to-day. The work was priceless to the writer of it, and well paid him in the doing, for it gave him immortality. The work before us may be of less value than Le Clerc's, but it contains the results of a life of study and reflection, largely in seclusion, with little respite by night or by day, on the great themes that cluster around the history and sciences of medicine. Le Clerc's is different in that respect. He did not care to delve in final causes, nor to enter the Penetralia of things.

We shall be charged with partiality for the author in what we have written. To such a charge we shall have to plead guilty. We confess that we are in sympathy with the author's philosophical views, and the manner in which he treats his subject. We are also in accord with the manner in which he criticizes cults and fads, and the course pursued by system builders, and agree with him that they had and do now have a demoralizing trend in the profession of medicine.

The philosophy of God, the Unconscious Genus of the world, which is set forth here and there in his volumes, will provoke no little criticism. We trust no one will misunderstand him, nor his logic of causation. He is, of a truth a deeply religious man, and believes in the existence of divine men and women of ancient and modern times—men and women who lived and do live to their higher selves in the enjoyment of the Beatitudes. But he also believes in perfect freedom of intellectual conviction, and insists that Religion and Philosophy should be kept distinct and separate; likewise Religion and Doctrine. There is a wide difference, for example, between the religion of Jesus, and the myths and conceits with which the Greek sophists have connected his name under the cognomen of Christianity. One may accept the one and reject the other, as does the author of these volumes. Religion, it should be understood, springs from the emotions of the heart, the fount of feeling; Philosophy, from the thinking Mind—intellectual cognition. One is pure feeling, the other is a process of intellection, having its own laws of evidence and conclusions. Nevertheless, the author holds that the exercise of the moral and emotional sentiments should be under the guidance of Reason and the sense called Common; otherwise, it is sure to descend in expression or manifestation to the irrational and absurd, examples of which the history of all religions that have blessed and cursed mankind is full.

To the skeptical of the verities and profitableness of such themes, it may not be out of place to say that no hypothesis or proposition has been advanced in Dr. Gorton's pages that is not justified by logical deductions from, or actual demonstrations of, science—the ultimate arbiter. Dr. Gorton at least makes this claim. The truth of the statement may be questioned by many excellent persons even in the professions. It is too much to expect that the average doctor of medicine or divinity will concede its truth, or accept the proposition. That is of small consequence to the author. Each is too busy with his cases, or too absorbed in the meaning of certain texts of the Old Testament, wholly obsolete in modern thought, to give heed to them. The average member of either profession—we say it with perfect respect—is not learned in the subtle mysteries of nature, nor fully qualified to grasp them, nor to comprehend their significance, nor to deal with them profitably, though he may not know it. Moreover, if he had the ability and the mental discipline necessary for such tasks his absorption in the struggle of life and living would inevitably destroy his taste for such studies. One life is too short even at its maximum duration for one who is hampered by bread and butter cares and the desires to maintain its idle pomp and shallow pretense, to enter the Penetralia of the Cosmos.

We especially commend the author's criticism of the venerable authoress of "Science and Health," and of Christian Science, so-called. While it is sharp and severe, it is sound and judicious; while tempered with gentleness, it has all the severity of truth. His views of cures by faith are scientifically true. So, also, are they of "Mental Healing." He is likewise quite right in claiming the existence of an "All Heal" principle in Nature, as first exploited by Hippocrates and reiterated by all the masters of medical thought all down the centuries since that sage's day.

It would be an agreeable task to review Dr. Gorton's volumes at length; to dwell on the striking features which they contain of medical art and criticism, and of science and philosophy. But we feel sure that sufficient space would not be accorded us in the crowded columns of a medical journal, for such a purpose. The plan of the work is well conceived and consistently carried out. The style of the author's English is direct and clear,—often epigrammatic; his arguments forcible and convincing. Rarely is a dull paragraph to be found in his pages. Truth is the object at which he aims; and the sincere seeker of truth will not fail to find it in his volumes.

A Manual of Diseases of the Nose, Throat, and Ear.—By E. Baldwin Gleason, M.D., Clinical Professor of Otology at the Medico-Chirurgical College, Philadelphia. Second Revised Edition. 12mo of 563 pages, profusely illustrated. Philadelphia and London: W. B. Saunders Company, 1910. Flexible leather, $2.50 net.

This very excellent manual has been carefully re-

vised, rewritten, and much new matter added. The Formulary has been improved, many new cuts have been placed in the text, and great pains has been taken to make this edition superior to the first.

The students and the general practitioner will find it a handy useful guide.

State Board Examination Questions and Answers of Forty-One States and Two Canadian Provinces.—A practical work, giving authentic questions and authoritative answers that will prove helpful in passing State Board examinations. Reprinted from the "Medical Record." Third edition revised and greatly enlarged. 12mo, 819 pages. New York: William Wood & Company, 1910.

The title of this book explains its scope sufficiently.

That the work has been well done, there can be no doubt, when one looks at its source, and realizes that the text has already been published, and found useful, by the readers of a great weekly journal.

Every candidate for State license should have a copy.

The Prevention of Sexual Diseases.—By Victor G. Vecki, M.D., Member American Medical Association, etc., with introduction by William J. Robinson, M.D. Octavo, 132 pages. Price $1.50, postpaid. The Critic & Guide Company, New York, 1910.

The author of this little book has certainly told the plain truth as he understands it, in unmistakable language.

The text is based upon a large experience, and is worthy of consideration.

His positive ideas as to the regulation of prostitution, will be questioned by many, but deserve profound discussion.

The book should have a wide reading, not only by physicians, but by all who are interested in the subject, and who should not be?

Progressive Medicine.—A quarterly digest of advances, discoveries and improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in Jefferson Medical College, Philadelphia, assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics. Dec. 1, 1910. $6 per annum. Lea & Febiger, Philadelphia and New York.

The present volume contains Diseases of the Digestive Tract and Allied Organs, the Liver, Pancreas and Peritoneum. Diseases of the Kidneys. Surgery of the Extremities, Shock. Anesthesia, Infections, Fractures and Dislocations, and Tumors. Genito-Urinary Diseases. Practical Therapeutic Referendum.

As usual the articles are of the highest order. The article on practical therapeutics is worth the price of the book.

An Anatomical and Surgical Study of Fractures of the Elbow.—By Astley P. C. Ashhurst, M.D., of the Medical Department, University of Pennsylvania. Imperial octavo, 16 pages, with 150 illustrations. Cloth, $2.75 net. Lea & Febiger, Philadelphia and New York, 1910.

The prize of fifteen hundred dollars awarded by three eminent surgeons, who pronounced this work "one of great value," should be sufficient evidence of its worth.

The text is fully and splendidly illustrated with skiagraphs and photographs.

All surgeons at least will want a copy.

The work shows a distinct advance in a study which the skiagraph has done much to elucidate. The subject is a difficult and neglected one.

Pneumonia.—A Symposium on the occurrence, etiology, diagnosis, prognosis and treatment of pneumonia. Reprinted from 'American Medicine, April, 1910. Arranged and edited by H. Edwin Lewis, M.D. 12mo, 182 pages. American Medical Publishing Co., New York, 1910.

This is an excellent, useful, little book, written by several specialists, showing the practical side of diagnosis and treatment. It is handy to pick up when one has a case, is soon read, and covers the subject sufficiently for practical purposes. Get a copy.

CORRESPONDENCE

PERILOUS GASTRO-VERTIGO—PTOMAINE.

To the Editor of the MEDICAL TIMES:

I will endeavor to write this short paper in the direct interest of the sick. Some of us may be disposed to think we know pretty much all about disease. This may be rather doubted unless we have experienced it in our own persons. Have many of the readers of the MEDICAL TIMES been in the crisis of severe ptomaine? May the mercies of good Providence spare them all from the struggle. We look at others when they are in acute suffering, and imagine we comprehend. The degrees of realization by different persons fortunately may materially differ. Aggressions of symptoms, and the hammered out results in severely disordered conditions, are largely measured by variations of individuality. "Who is Who?" in the day's doings has become a trite question in the passing scenes of the world's immense affairs. But in sudden and serious illness, "Who is who?" in grit, in grip, in rallying blood and temperament tallies the score of those who weather stress of vital storm—also of those who helplessly go down. Formerly I knew ptomaine by name and bookish description. Now I talk a phase of ptomaine toxemia by the vital struggle with its depression.

Most unexpectedly the patient was myself. Permit me in somewhat didactic detail to follow this case. On the morning of November 17th, ult., rose at my usual hour — went down to breakfast in usual morning health. Was pleased to see several hot soft-boiled eggs brought on in readiness. My thoughtful wife transferred contents of one steaming shell into empty cup for me to season as desired. This done, I sampled a prepared teaspoonful. The taste was suspiciously "off"—the examining smell the same. "This egg is not right," I said as I pushed the cup aside. "Mr. Blank said these eggs were fresh in—I will open another in a clean cup," she replied. I glanced at the second egg as she handed it to me. The yolk was in form. Egg looked as if palatable. When smelled, the odor mildly reminded me of our old-fashioned packing chaff. "Pshaw! I'll not worry my wife with querulous fastidiousness about an egg!" was my thought. Stirred in my seasoning — ate egg with bread and butter — drank my cup of coffee — went up to office. Within fifteen minutes broke into relaxed perspiration, was seized with violent vomiting attended with vertigo. At this siege I thought the stomach had emptied its

yellowed breakfast contents—that the trouble was transient — would soon be over — but it was only the beginning. Again and again through the day the vomiting was repeated with increasing wrench with the egg color in the emesis. There was trembling, some coldness, and growing weakness with disability to have the head raised because of augmenting dizziness.

Hoping to get relief by starting the bowels, I twice drank doses of solutions of popularized effervescent saline. Each time this was returned from the stomach with intense nausea. Sinapisms of black mustard and flour were applied over the stomach with hope of diverting the nausea by counter-irritation—until the skin could bear no more. At intervals liberal dosages of Sub Nitrate of Bismuth mixed into cold water were swallowed to reduce the stomach's irritability. Some mouthfuls of strong coffee was also tried, but was soon returned. Having reached the end of the yellowed vomit, the retching became relatively dry. Night had advanced. Was helped from office couch to my bed in a near-by unheated room on the same floor —and where fresh outdoor air is always readily accessible day and night. There were haunting pains of headache, from occiput around the temples and brows. Back ached severely across upper sacrum. Had been having moderate sciatic pains in right hip and thigh. Lying prone with head in bed, on right side, with pylorous gravity downward in relief of nausea, the pressure came upon the sciatic hip—painful to bear but favored short intervals of slumber. If, to relieve the painful hip, I turned to back or tried to change to left side, the sense of rolling vertigo and nausea at once forced me to return to right. The unavoidable moans of distress made unhappy appeals to the minds of my attendants. They watched at hand and nearby the long night through to assist as needed. There being thirst, a couple swallows of cold water or of cold tea was grateful, administered through slender spout of small drinking cup to avoid raising of swimming head and renewed retching.

Second day nausea and dry retching continued on least provocation. No indications of movement of bowels. Stomach too sick for me to think of repeating relaxing doses. Skin on right hip becoming sore from continuous pressure. Began to feel apprehensive about welfare of brain—wondered at times if the accident of any clot was occurring to make uncertain the reason of the situation of constant deep vertigo and reflex nausea. Hoped against hope the second night. Had my attending wife begin to cremate old letters and other paper data which in any event could not now concern anybody else. Wondered if my usefulness to family and the world was about to close.

On third day was less disposed to try to vomit. Swimming vertigo continued same on making movement of head. Before daylight had felt peculiar threat of sickness which I believed arose from emptiness. Asked that a good apple, in waiting, be peeled and quartered. Chewed and swallowed the raw apple with peculiar relish. But was in low state of spirits. Had lost much natural heat power. Muffled between blankets, with hose on to overlap bottoms of drawers, would not keep legs warm. In my unheated room, hands and arms always under blankets. Had new woollen knit sweater put on to wear in bed and allow protection and freedom to arms and shoulders at will outside of nested covers. Sciatic pains began to annoy both hips. Restlessness got possession. Could lie in one position but from three to five minutes. Skin of hands looked shriveled. Features pallid and shrunken. Knew was in need of nourishment. Tried some sherry —but after-effects not agreeable. After daylight, chewed the flavor out from the fibre of several shavings of dried beef and swallowed the ensalivated juice. I knew that it must stay. My wife brought me oatmeal and cream—ate five teaspoonfuls for breakfast. My eldest son had, on the quiet, prepared me a few rations of fresh lean beef juice. Without head being raised I took several swallows of it through the nozzle of the drinking cup and relished the taste. He has since told me how this nourishment was prepared. He chopped the lean fresh beef. Covered it with cold water. Kept it on a simmer stew for five hours and seasoned to taste. Meanwhile had boiled oatmeal to starch—strained out the starch and added it to the beef juice—simmered these together and the preparation was ready to use. Warm or cold it seemed perfectly adapted to my needs—taken three swallows at a time. A cold baked apple served for my dinner.

This third day was especially jading. For restlessness and pains I decided to try effects of my No. 2 capsule Relievos containing Acetanilid, Sodium Salicylate, Sodium Benzoate in equal proportions, these fortified with minimum quantity of Quinine and Citrated Caffein—the entire contents of capsule weighing perhaps five to six grains if packed. It almost immediately began to reduce the head pain and sciatic uneasiness. Forget what I tried for supper—perhaps a raw apple followed by more beef juice. On closer view of possible demise, a thoughtful man becomes spiritually candid. Although now, at nearly 78, the import of incidental events of long gone-by days should seem as lifeless ashes; nevertheless protruding thoughts began to spread hazy veils of charity for all others, regrets unfolded for all the preventable turbulent errors, the blind mistakes and short-comings that marred the turning pages of past life; and an aching wish rose that the vanished opportunities now gone might somehow return to be lived over with happier results. The persistence of severe vertigo, and shadows of possible cerebral injury, again stalked around me like some dusky bird awaiting prey. But later, with moderate abatement of discomforts, I began another mental review of the situation. The kidneys were in good condition and doing fine service. Urine of gold-amber color and abundant. The presence of nourishment in stomach was now retained. Remembered that vertigo sometimes attended anemia of the brain. That for several years I had purposely, as a preventative, used moderately of stock India Pale Ale as mild alcoholic tonic with view of preserving from undue waste the body tissues in advancing age, and also for toughening the brain-cell structure against liability to early rupture and apoplexy. Persuaded myself that my theory had been correct. That my present condition was due to straight ptomaine poisoning by eating at breakfast that deteriorating off-luck cold storage egg on empty stomach. That I now detected no real impairment of brain or nerve function, and was surviving the wretched slump. That Richard might become himself again. And with deeply thankful heart to the Great Physician I dismissed that brooding bird

of evil omen. The healing mission of medicine can never cut far away from the sustaining mission of religion. A consoled spirit marvelously aids restoration of disordered body not fatally stricken.

On the fourth day, towards morning, I relished the peeled quarters of another raw apple and swallowed a little cold tea. At breakfast time my wife brought me a liberal piece of elegant fried mackeral, some softened toast buttered, and warm coffee. Curled upon my right, with head down, I picked at this enjoyable repast. It seemed better than medicine. At noon chose a baked potato. Bowels not yet open. My second son was in favor of calling in a doctor—invited a physician friend to make a social visit. I had avoided doctors — fearing the repletion of their therapeutic ideas which might sicken my jaded stomach. When the doctor came in, told him was about to try a different effervescing aperient to get bowels open. He urged that I first take a one tenth grain tablet of Calomel, three doses half hour apart. Spent most of the night following up with the saline in moderate doses through spout of drinking cup. Towards day the call arrived. Pressure upon porcelain bedpan hurt, gave no advantage of gravity, defeated its purpose. With reeling head bowed over supporting cane, and nearly carried by assistant, was helped to toilet in bathroom but a few yards away. That clearance was the real beginning of relief to head. My capsule was repeated, in P. M., for several days. I tippled as tentative with most popular artificial digestives. My taste for California Sherry became agreeable, and a mouthful or two would occasionally seem to hold me together. With re-establishment of digestion the acceptance of foods was increased and evident return of strength. Vertiginous head permitted me to lie upon left side. Was becoming comfortable and happy. Ninth day was Thanksgiving. Was enabled to be raised up and pillowed long enough to partake of the excellent dinner —including the cranberry sauce and pumpkin pie—not omitting the refreshing grape juice drink—from the "waiter" upon my knees. Dispensed with the night watching—as could begin to depend on myself. Diet took diversified range—grapes, grape fruit, chipped dried beef boiled in milk, lamb chop, roast beef gravy on bread, Sour Kraut, California canned cherries, mashed potato, a little of bacon. Foods were of more importance than drugs. On the fourteenth day was able to get out of bed without help, dress and go over to the office, considering myself a gently quiet convalescent. On the eighteenth day walked very well without vertigo or nausea, and am writing this brief of the story of a severe case of Ptomaine poisoning—by stale cold-storage egg.

A ready thinker may ask "Why did you not call in able doctors at once?" Because of my habit of self-reliance; because of avoidance of all neighborhood excitement; because the contrasting opinions of differing doctors often make patients worse.

Another progressive man asks "Why did he not have that stomach promptly pumped out to relieve it of ptomaine contents?" But look at the suspense, the fuss and flurry of getting operator and implements together when a man cannot hold up his head. The stomach was pumping itself. Mechanical means might have done it better—might have done it worse. The result might have been quicker one way or the other. A big lot of bad Western eggs has undoubtedly been lately put upon the Eastern markets — Philadelphia and elsewhere. Various guilty dealers here have been traced and arrested for endangering the public health. Tons of degenerate eggs are being condemned. A woman and her two children were taken to hospital the other day with ptomaine after eating a slice of sponge cake bought at a store on the corner. Buffalo, N. Y., Nov. 29, ult., reports that five tons of bad eggs have been seized there within forty-eight hours of that date. The price-controlling egg trust not only preys upon consumers, but is a fearful menace to human lives.

We aim to be fair. It should not be assumed that every egg in a superannuated cold storage lot reached the same stage of poisonous degeneracy by the same date. Hence one person may be made dangerously ill while a score of others escape. Again, an empty stomach after a night's fasting would naturally prove more susceptible to injury than would be caused by the same egg at another hour. Yet again, it is also probable that in certain cases where persons become seriously ill from ptomaine poisoning by egg, by icecream, by cake, by cream puffs, by tainted oysters or fish, there is often a pre-existing state of peculiar receptivity of harm at the time, hence one will be taken while others enjoy immunity. In pure food only can we expect safety.

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GEORGE B. H. SWAYZE, M.D.

OLD ANTAGONISMS DYING.

To the Editor of the MEDICAL TIMES:

During the past decade there has been a perceptible advance made in the way of bringing about a better state of feeling between the schools in medicine. Much of this is due to the establishment of State Boards which placed legally qualified physicians of all schools on the same footing. This has been aided powerfully by the advent of various sects composed of persons who had no training in medical schools, no knowledge of the human mechanism, and yet presumed to treat its ailments in competition with regularly trained physicians of the schools having properly equipped colleges. The presence of a common enemy led us to drop our internecine strife; the establishment of courteous relations was quickly followed by those of amity, and the fuller recognition of the individual right of belief and practice has rendered the old lines of demarcation indistinct.

This has inevitably led to an examination of each other's means and methods, without the stubborn intention of finding them comprehensible. Instead, there has been somewhat of a hope that possibly some good might be therein discovered that could be utilized. Investigation in this spirit is certain to draw the former contestants closer toward harmony. We see in the older school evidences of a search for more precision in medication. The reign of the prescription is threatened, and the direct application of single remedies to modify function so as to restore healthy equilibrium, is openly advocated. A prominent clinician and teacher in Philadelphia has gone so far as to publish a paper on the antagonism between large and small doses, even claiming that minute doses of one remedy antidote the toxic effects of large doses of another. And yet he is not ejected from his societies or called on to vacate his chair in the medical

college. Truly it seems that the antagonism between small and large doses is being comprehended, and the only question is as to how small the dose may be and yet afford appreciable results. Possibly we may find it advisable to meet our elder brethren half way, and ask ourselves whether the results attributed to infinitesimal doses have any other basis than chance or suggestion. We may ask ourselves if there is not a legitimate place for the big dose, where we may secure results somewhat more promptly than we do from the similium. I never quite ventured to tell my patients they must wait 47 days for the relief Hering promised from chamomilla.

In another direction we might take an advantageous step. Our provings made with crude drugs lay us open to the charge of self-deception, since the results must necessarily partake of the uncertainty of the drug. The idea of a whole-plant effect verges too close to mysticism for modern science. The effect of any plant is the sum of the effects of its active ingredients, and as these vary the effects vary proportionately. Opium is not the one drug, but 26, and when we claim that identical results follow the use of a preparation from opium containing 20 per cent. of morphine, as from one with no morphine at all, we discredit all our work. Homeopathy arose a century ago, when many things now familiar were unknown. But homeopathy has not crystallised, nor did all development cease with Hahnemann's death. It is a living, growing, vital thing, and as a true science is capable of assimilating and harmonizing with every other true development of modern science.

Now that our brethren seem inclined to see what there is of good in our methods, it behooves us to examine into theirs. In this way we again prove ourselves in a right path, for when two men are climbing the heights by different routes, they must come closer together as they near the summit.

December, 1910, Chicago, Ill.

JAMES ALEXANDER, M.D.

WHAT CONSTITUTES A SPECIALIST? COMMENTS ON DEATHS OF TOLSTOI AN POPE LEO XIII., WITH POINTS ON "INFANTILE PARALYSIS" AND TYPHOID FEVER.

To the Editor of the MEDICAL TIMES:

The heart of Tolstoi has ceased to beat; "two of the leading 'heart specialists' of Moscow" put a stop to it: "His heart succumbed shortly after he had issued from under the influence of an injected stimulant," says the account concerning the death of the great Russian. Even at the advanced age of 82 a man has a right to die a natural death unless he be convicted of some heinous crime and sentenced according to law. Neither Tolstoi, at 82, nor Leo XIII., at 90-odd, can be said to have died a natural death, in view of the potent drug-treatment employed in both cases. The weak, feebly-beating heart of a sick man is like unto the weak, over-taxed housewife; both need the utmost rest instead of being given more work. The injection of "stimulants" for the weak heart is analogous to lashing the back of an exhausted washerwoman to drive her back to the wash-tub.

In the late Pope's case, on the last day of nature's fight against fearful odds—not of the patient's age, nor yet of his disease, but of the treatment—Dr. Lapponi said, "He is being kept alive by stimulants!" God help the poor-devil laity in face of such ignorance among so-called eminent practitioners! No life has ever been prolonged by even the fraction of a second of time by any potent drug-poison, whether or no it be described as a stimulant. On the contrary, every such procedure is properly regarded as "kicking a man down." Dr. Lapponi added: "During the last 23 hours he has had two injections of camphorated oil, three of caffeine and two of salt water, besides drinking stimulants!" The healthiest jungle-tiger would have succumbed to such brutal treatment. It is because such treatment is "regular" and long prevailing that such methods as Christian Science, so-called, and other faith-cures have acquired such vogue. They do not *poison* their patients; hence, many of their patrons get well, or about again, in spite of little or no aid from the "treatment"!

What, let us ask, constitutes a specialist? And, which of the two, Flexner, frankly acknowledging that he knows nothing about the cause of infantile paralysis, but busily engaged in the search for the alleged "germ," not even knowing how to direct curative treatment for the disease, or nurse Lillian Balz, who, at the hospital at Burlington, N. J., cured six cases of the disease, that the attending physicians had declared past hope, cured them by means of "external applications and massage"—which of the two, Flexner or Balz, I ask, is the real specialist in "infantile paralysis"? In truth the chief cause of paralysis is our abnormal sitting habit, resting the weight of the body on the tip end of the spine; the weaker ones are the victims,—weaker in spine—young or old.

Prof. Flexner injects into the spine of monkeys a fluid derived from the bodies of children who have died of paralysis, and because he succeeds in paralyzing his subjects he fancies that he is near the discovery of the mythical germ of the disease! Laboratorial experiments have shown that the injection of the pure saliva of a healthy man into the circulation of animals always produces disease, and in some instances paralysis and death. What, then, might we not look for from the injection of a filthy substance taken from a cadaver? Certainly not a cure. And, yet, it is through such experimentation that the "specialist" hopes to find the "specific" which is to "cure" paralysis! Poor fellow, and now a victim of appendectomy!

Even now, our super-scientific doctors are injecting hundreds of nurses at the hospitals with typhoid bacilli soup for the avowed purpose of immunizing them from typhoid fever, a disease of auto-toxemia in every instance from dyspeptic cess-pool of the intestines, while the fearful mortality in the disease is the product, chiefly, of maintaining the cess-pool condition by means of forced-feeding. The injecting physicians are being described as "specialists in typhoid fever!"

Boston, Dec. 8, 1910. CHARLES E. PAGE, M. D.

Plague Fighters Attacked.—There was recently serious rioting in Shanghai in connection with the sanitary work for the prevention of the spread of the plague. Reports had been spread among the ignorant natives that the health officers were poisoning their fellow countrymen in the hospitals, taking out the eyes of babies by electricity and committing other hideous cruelties. The sanitary officers were attacked and the riot assumed such proportions that volunteers were called out to restore order; several foreigners were seriously injured during the rioting.

RETROSPECTIVE

Diseases of the Heart.—Acute pericarditis is really primary, more frequently secondary, following rheumatism, influenza, pneumonia. We recognize an acute dry pericarditis with effusion which can be serous or sero-fibrinous, purulent or hemorrhagic. The dry pericarditis, or the pericarditis with effusion, after the fluid is absorbed, causes formation of adhesions similar to pleuritic. The symptoms of acute pericarditis may be well marked and still at times run without any clinical evidence or rather without causing the patient to make any special complaint directed to the region of the heart.

It frequently begins with chills and fever of the remittent type, often with nausea and vomiting, pain in the precordial region, distress, tenderness, at times sharp shooting pains which are increased by coughing and breathing, increased cardiac action, sometimes severe palpitation. If the fluid accumulates in the pericardial sac the symptoms increase in severity, the precordial oppression is more marked and there is a tendency to faintness, dyspnœa; the pulse becomes more feeble and irregular.

The prognosis in acute pericarditis depends upon the severity of the inflammation and upon the causes and co-existing diseases. A dry pericarditis usually subsides with proper treatment in the course of a few days, while pericarditis with effusion lasts longer, and if the amount of fluid is very large, life is endangered from pressure of the fluid on the heart muscle. The adhering pericardium remains permanently and continues to cause cardiac irritability sometimes for the rest of life.

Treatment: Perfect rest in bed. Not only physical but mental as well. The mind of the patient is to be kept at peace. Neglect of this essential rule and lack of a strict regime has caused death, particularly in cases of effusion in the pericardium. The indications for treatment consist in trying to limit the extent of inflammation and abort the inflammatory stage as quickly as possible. In plethoric strong subjects, a few leeches applied to the base of the heart reduce the inflammation. This is followed by an application of an ice bag. While speaking of the ice bag applied to the pericardium, I wish to call attention to the necessity of having the ice bag snugly fastened so that the cold application shall be directed to its destination. Patients with pericarditis—more so when the pericardium is filled with fluid, are short of breath. They prefer the sitting posture and in this position the ice bag easily slides down and freezes the abdomen and not the chest. A narrow tape run through the loops of the ice bag and tied snugly around the chest, or the ice bag can be suspended from the neck. At any rate the ice shall cover the region of the heart. The cold applications are continued as long as the acute stage persists.

Internal medication is given for the purpose of keeping the bowels freely open. We order calomel or salts. We restrict the diet. We prefer milk, soups, farinaceous foods and try to avoid all substances causing fermentation. Distension of the intestines will push up the diaphragm, crowd the heart, and increase the dyspnœa and pain. For the rapid and at times irregular pulse we prescribe digitalis which by regulating the action of the heart, has also a beneficial effect on the course of the inflammation.

The effusion of the pericardial sac, as a rule, is absorbed quite rapidly and if the absorption is too slow we may hasten it by application of blisters to the pericardium and internal administration of iodides which promote absorption. If these conservative measures are not crowned with success and the amount of fluids becomes alarming, then we apply to the pericardium the same principle as to any other serous cavity. We empty it by tapping. Tapping of the pericardium is indicated in large serous or hemorrhagic effusions, while if the effusion is found to be purulent it is to be treated by incision.

The endocardium is also subject to an acute and chronic inflammation. During the course of rheumatism or pneumonia or other infectious diseases we observe the development of an acute endocarditis which consists in a fibrinous inflammation of the serous membrane lining the cavity of the heart and forming its valves which are the seats of deposit of the inflammatory material, or are the seats of ulceration; resulting in shrinkage of the valves, in narrowing of the lumen of the orifice leading from the auricle of the heart to the ventricle. The most frequent form of acute endocarditis is the secondary one, which develops in the course of rheumatism or infectious fevers. More rare is the other, primary, acute endocarditis, due to a general sepsis, the so-called malignant or septic endocarditis. While the rheumatic endocarditis sets in very frequently in the most insidious way and is only discovered by a careful observer, the malignant form runs with very severe general symptoms, simulating typhoid; such symptoms as headache, restlessness, delirium, coated dry tongue, sores on lips, nausea, vomiting, loose stools, irregular temperature varying from 100 to 104 and 105 degrees, associated with chills and profuse sweating. The course of rheumatism may be marked by an elevation of temperature, some precordial pain, short cough, slight dyspnœa, increased cardiac action, with throbbing of the carotids and noises in the ear.

Prognosis in the acute endocarditis of the benign form is favorable as to life, while the lesions in the heart produced by the inflammation or ulceration are permanent and can never be repaired. The treatment of acute endocarditis is similar to that of pericarditis. Rest in bed, ice to the heart, bland diet, occasional narcotics, cardiac regulators when the pulse is rapid and irregular, etc.

In the malignant form the treatment is also symptomatic, but in this case we are to deal with a severe systemic infection and our treatment has to be directed not only to the heart but to the body in general. We prescribe a nutritious diet, we give early stimulants, alcohol, strychnia, caffeine, keeping in mind the destructive action of the poison circulating in the blood and the nerve centres and on the heart's muscle.

Chronic endocarditis is in the majority of cases the result of acute inflammations and under this heading we might consider all the valvular diseases of the heart.

The treatment and nursing of patients with different diseases of the heart depends so much on a thorough and correct physical diagnosis that it is impossible to outline any routine scheme for the conditions varying

with the age, location and cause of the heart disease.

The true angina is a condition caused by changes in the coronary arteries feeding the heart. Angina as we understand it at present, is usually caused by a spasm of the artery causing the sudden anæmia of that part of the heart muscle which is fed by this particular branch of the artery. This sudden anæmia is the nearest cause of the attack, which consists in severe pain in the cardiac region accompanied by a sensation and dread of dissolution, death. This fear of death is the main characteristic of the attack of true angina. After some physical exertion or mental excitement, at times following a heavy meal, the patient is suddenly seized with an attack of pain in the heart. The pain is of great intensity. The chest is fixed, the breathing quickened. The face wears a look of horror, it is pale and leadened. A cold sweat breaks out upon the forehead. Worse than the pain is the feeling of fearful sickness and depression. The patient gasps, "I shall die," and sometimes this short attack ends in death. This attack of true angina is to be differentiated from the so-called nervous, false angina, mostly seen in nervous women, often called pseudo angina. The onset is more slow, the patient complains loudly, is very restless (in contrast with the true angina where the patient is motionless). The pulse is quickened, the face is flushed. There is no horror of death. The pain is not so severe; it is more diffused and there are other hysterical phenomena disclosing the true nature of the attack. The prognosis in the true angina, which is due to irreparable changes in the arteries feeding the heart or in the heart ganglia, is an exceedingly grave one. If the patient is not carried away by the first attack, he will succumb sooner or later to another one. In pseudo angina, the prognosis is always favorable. For the attack of true angina our assistance has to be prompt and energetic. A hypodermic of morphia and inhalation of a pearl of amyl nitrite cuts the attack short. During the intervals between the attacks we prescribe iodides with the view of improving the nutrition of the arteries and arrest the sclerotic changes. For the pseudo angina or nervous angina, there is no need of morphine. In these cases the nervines are indicated, and aromatic spirits of ammonia, tincture of valerian, asafœtida, and during the intervals, drugs and other measures directed towards the raising of the general tone and stability of the nervous system.

The Relation of Experimental to Human Poliomyelitis.—Dr. Simon Flexner read this paper at the October meeting of the Medical Society of the County of New York. He said that during the past summer there were greater numbers of cases of poliomyelitis than had ever been known before and probably a greater number than had occurred in the previous two years during which this epidmic prevailed. From official figures, as well as those unofficial, he thought it was reasonable to state that there occurred as many as 20,000 cases of epidemic poliomyelitis during the past summer in this country. The mortality from this disease varied from five to ten per cent., and the percentage of children crippled was probably 75 per cent.

It is desirable that physicians who deal with this disease should realize that they are dealing with a contagious disease, and that it could be spread by healthy intermediaries. The disease has been looked upon as something mysterious, but little knowledge of its agency and of its pathology is had. However, since the epidemic of three years ago an opportunity has been afforded for a study of the disease by experimental methods. It can be transmitted among the lower animals, but only among those that are closely allied to the human species, namely the monkey. The infected material from the human sources from the central nervous system and spinal cord must be brought in direct relationship with the central nervous system of the monkey. The author knows of no disease that is so rapidly reproduced in the monkey. Monkeys do not spontaneously take the disease, and the question naturally arises why a disease which is so fatal in this species should not occur naturally or spontaneously in that species. This might seem to indicate that the disease is not so contagious as he had suggested. Dr. Flexner called attention to the natural defenses of the organism against disease. The experimental study had established the fact that this particular virus belonged to that class of infectious agents which were described as filtrates, the kind that were beyond the observation of the human eye.

In speaking of the pathogenesis of the disease, Dr. Flexner said that the indications were that the virus of this disease did not act directly upon the gray matter of the cord or ganglion cells of the anterior portion of the cord. The paralysis which resulted was not due to the immediate effects or results of destruction of these cells. The disease began as an infection of the meninges, especially in the tissues near the blood vessels. It is very important to bear in mind that the restoration of function occurred so remarkably that one should know that he is not dealing with actually destroyed ganglion cells, but with some functional disturbance.

Dr. Flexner was very hopeful that when the disease was once acquired it might be controlled. He asked the medical profession to become more united in believing in the contagiousness of the disease; much more then could be accomplished toward the elimination of this distressing disease.

The Reflexes in Hysteria.—The criterion of selection being the difference of sensibility in the two halves of the body, Knapp (Jour. Nerv. and Ment. Dis., Feb., 1910), in a hundred cases of hysteria, studied the tendon and cutaneous reflexes. Most of the cases also showed weakness in the hypoesthetic side. Knapp defends his principle of selection by the usefulness of the patients' comparison of the stimuli in tabes, nerve injury and cerebral hœmorrhage, hardly comparable problems. He criticises what he calls Babinski's "cruder" methods, making the statement that he has found total anæsthesia rare, as is also total paralysis. This experience is unusual; and Knapp should know that Babinski's faradic test has only been applied when anæsthesia is complete. Thomas' and Meigs' well-known explanations of the distribution of hysterical sensory loss are stigmatised as "amusing bits of special pleading."

Knapp implies that others reject comparative tests of sensibility in hystericals for fear of suggestioning, and he states that there is no definite criterion for the diagnosis of hysteria, as he does not accept that of Babinski.

He found more exaggeration of the tendon reflexes than exists in healthy people under excitement, as of runners before a Marathon race, of whom 90 per cent. show patellar twitch. Upon the basis of a "larger number," he concludes, that "hysteria like neurasthenia, may cause moderate exaggeration of the tendon reflexes." (To the reviewer "large number" seems a somewhat vague ground on which to build a pathogenesis.) Knapp is sceptical about the true clonus and lost-knee jerk in hysteria, and yet believes that the temporary loss found after extreme fatigue in Marathon runners may indicate that "conditions of exhaustion in hysteria may abolish the knee jerk." Would it not be more reasonable to say that conditions of exhaustion, with or without lost knee jerks, are apt to produce a hysterical state?

Fifty-seven times, the reflexes of the two sides differed, thirty-seven times for the knee jerk, and thirty times for the ankle jerk. It was twice as often greater on the anæsthetic side. Six cases showed unilateral spurious clonus. No quantitative estimations are recorded, and the nature of the spurious clonus is not described. The plantar reflex was absent or diminished in forty-seven cases; the fan reflex was not found. Out of fifty-one, the dominal reflex was lessened in twenty-four.

Thus, of the whole series, seventy-six showed a difference; skin reflexes, when altered, being so on the anæsthetic side, while the tendon reflexes were often increased, though sometimes diminished.

These results "seem to contradict the claim of Babinski, "that hysteria is incapable of modifying the skin and deep reflexes," and are an argument against his doctrine of pithiathism."

Knapp has not considered the fact that any organic state which may or may not change the reflexes may also increase hysterizability. In this regard, critics should recall Ashley Mackintoshe's analysis of insular sclerosis, and Cushing's remarkable report that every one of a hundred cases of cerebral neoplasm had been at first diagnosed as hysteria. General intoxicative states too and even the menstrual period greatly exaggerates hysterizability. Nor are the neurones on each side of the body always equally affected by the former. Even cardiac and renal œdema is sometimes unilateral, in the viscera as well as in the subcutaneous tissue.

Knapp, who is a most careful observer as well as sound critic, as may be seen by his remarkable paper on Dementia Precox as a chronic intoxication psychosis, which shows too that he is not afraid of orthodoxy, may have anticipated these objections. But there is no remark in his paper, explicit or implicit, which indicates that he has gone beyond the principle of selection he mentions, viz., difference of cutaneous sensibility as expressed upon interrogation, surely an inadequate basis for conclusions of such importance.

Pulmonary Hemorrhage at High Altitude.—In Public Health Reports for October 7th, Passed-Assistant Surgeon F. C. Smith discusses pulmonary hemorrhage in the tuberculous at high altitudes. He collected his data from the Marine Hospital Sanitarium at Fort Stanton, New Mexico, situated 6,231 feet above sea level. Since 1899 fifty-six deaths from this cause have occurred there. He finds that hemorrhage from the lungs is responsible for about 10 per cent. of the total mortality. Syphilis and chronic alcoholism increase the liability to fatal hemorrhage. Small pulmonary hemorrhages are rarely suddenly fatal, but may cause a dangerous insufflation pneumonia. Recurrence of hemorrhages is rarely or never seen after bronchopneumonia develops. No age period of adult manhood seems especially predisposed to fatal pulmonary hemorrhage. Exciting cause of fatal hemorrhage was noticeably absent; the majority of subjects were in bed at the time and a large number presumably asleep. Acute types of pulmonary tuberculosis are least liable to this accident; negroes showed a lower mortality from hemorrhage than whites. Hemorrhage has not been common immediately after arrival from sea level; the increased mortality from hemorrhage after prolonged residence at high altitude may properly be ascribed to the chronic type of disease in these individuals. Disease of the heart or embarrassed circulation from any cause predisposes to a fatal issue when pulmonary hemorrhage occurs. Pulmonary hemorrhage is not more frequent at high altitude than at sea level, but the results are perhaps more often serious, especially in those with impaired circulation.

The results at Fort Stanton would be in favor with the view that high altitudes are not the best for the treatment of hemorrhagic cases of pulmonary tuberculosis.

Hematemesis.—Sir Dyce Duckworth (The Lancet, Oct. 29, 1910) remarks that many observers hold the view that in many patients there is no true ulceration present, but a series of small fissures, or chaps, from which blood oozes freely. With regard to a fatal issue in all cases by hemorrhage, he says that this is happily not a common occurrence. Whatever the lesion, the treatment of the patient is the same, and it consists in absolute rest, recumbency with head low, and morphine given hypodermically. Nothing whatever is to be given by the mouth, not even ice water or pieces of ice. Saline solution, in half-pint quantities, should be given by bowel, and nutrient enemata consisting of from eight to ten ounces of peptonized milk, with yolk of egg and grape sugar, repeated three or four times each day for three days. The mouth should be cleansed with borax, thymol and warm water several times a day. The next grave matter which it is well to bear in mind is the liability of perforation, with alarming symptoms of pain and collapse, calling for immediate surgical action. Milk and lime water and cream are the safest for the first feeding by mouth. An ice bag may be kept on the epigastrium as long as bleeding remains active. As to medical treatment, subnitrate of bismuth and calcined magnesia are the best agents, twenty grains of each after a few days when the bleeding is stopped. The stools should be watched for melina. Calcium lactate and adrenalin have both been sugested, but the author believes that we may dispense with any of these drugs if we carry out the physiological principles. Gastroenterostomy should be performed in cases where ulceration is found near the pyloric orifice on opening the stomach, for this condition may lead to dilatation and other difficulties. Hematemesis depending on advanced cirrhosis of the liver is always a serious and often a terminal symptom in such subjects. The bleeding is sometimes enormous, and should be treated along the same lines. Patients

suffering from gastric hemorrhage are always likely to do best in hospitals, for here they have skilled watching.

The Use of Thiosinamin in Tinnitus Aurium and Other Conditions.—This interesting drug was first introduced into medicine by von Hebra in 1892, and has since been shown to possess a most extraordinary effect upon certain abnormal tissues. Thiosinamine is derived from volatile oil of horseradish, or more commonly from the volatile oil of mustard seed, by the addition of alcohol and ammonia water and exposing it to heat. Under these conditions crystals of thiosinamine are deposited in prisms which are soluble in 2 parts of warm water, and in alcohol or ether. A solution of it should not redden litmus paper.

The particular use to which I wish to call attention is its value in cases of tinnitus aurium. No matter what the cause of this distressing symptom, thiosinamine certainly proves efficacious. The usual dose recommended is from ½ to 1 grain, but doses of 1/10 grain three times a day will usually be found sufficient. Larger doses are apt to cause nausea and vomiting. It may be prescribed in either powder or tablet form, and given by mouth. The beneficial effect noticed is probably due to the softening action which it possesses on all hypertrophied and sclerotic tissue.

We would urge our readers to give this drug a trial in all cases of tinnitus aurium. It is also used for the cure of lupus, for the absorption of scar tissues, and keloid, and with asserted success in malignant growths. In a case of keloid the drug in 10 per cent. solution in absolute alcohol may be injected directly into the part affected in the dose of 10 to 20 minims every third or fourth day. The injection is sometimes quite painful.

The drug causes a local reaction in those parts of the body in which scar tissue exists or where poorly developed pathological tissues are present. Because of this reaction the part affected undergoes more or less resolution and absorption takes place.

The Saw and Crushing Instruments in Surgery of the Nasal Septum.—It is the concensus of opinion among the leading rhinologists that the saw and crushing instruments are useless and unnecessary for the correction of the many obstructive difficulties due to deformities of the nasal septum. These procedures have been laid aside and have given way to the submucous resection operation, as recommended in Europe by Killian, of Freiburg, and in this country by Freer, of Chicago.

It is almost unnecessary to emphasize the point that if this mucous membrane, which has so much to do with the general well-being of the patient, is to perform its functions normally and properly it must not be hampered, restricted or interfered with, through destroying its ciliated epithelium, by the performance of lacerating and crushing operations. The important point is that under all circumstances the ciliated epithelium of the nose is to be preserved. There is really no good excuse to-day why the saw should be used in the nose, for there is no deviation or deformity of the septum which cannot be better relieved through the submucous resection operation than by any of the cutting or crushing operations. It is quite impossible to use the saw without lacerating a large amount of mucous membrane with the resulting scar tissue on which cilia will not develop, but on which forever after annoying crust formations and accumulations form.

Koch's Views Concerning Tuberculosis.—The great father of preventive medicine, in what is considered his last article (Zeitschrift für Hygiene) which was entitled the Epidemiology of Tuberculosis, discussed especially the question as to what the tuberculosis mortality in various countries is attributable. Since such reduction is not uniform, different causes must be responsible in different regions. Many explain the decrease in tuberculosis since the discovery of the Koch bacillus by the fact that, in consequence of the recognition of the infectious nature of tuberculosis, men are more careful to avoid the possibility of infection. This, however, is not a complete explanation. The claim that social legislation, particularly insurance against illness, has decreased tuberculosis is likewise valid to a certain degree; but the reduction of the mortality rate has been observed also in most other countries where such laws have not been introduced. Koch considers that sanatorium treatment and hospitalization of tuberculous individuals are the main factors in the reduction, where institutional care has been most readily available: the morbidity and mortality from tuberculosis have thereby been reduced to the greatest extent; and *vice versa*. Koch agrees with Newsholme in ascribing to this fact that in England and Scotland the mortality has decreased, whilst it has risen in Ireland, that in Norway the mortality has increased whilst it remains remarkably high in Paris. Of almost equal importance is the factor of housing conditions. The smaller the dwelling the more infection is favored; insufficient bed-room provision is especially dangerous. Cities frequently have a smaller tuberculosis mortality than the neighboring country, by reason of the lack of hospitals in the latter; and also by reason that country people are accustomed to sleeping in the poorest and smallest room in the house. It has been estimated that of the consumptives who died in their own homes 40.6 per cent. occupied one-room dwellings; 41.7 per cent. two-roomed dwellings. Such epidemiological studies can be carried out only on the basis of extensive mortality statistics, which must include exact details. When the mortality curve for a larger or smaller district is rising or does not show a decline, investigation should be made to learn whether the measures adopted are effective, or should be improved or supplemented. In Norway, for example, the course of the curve for pulmonary tuberculosis instigated the building of more sanatoria and hospitals; and in this way a reduction of the curve was brought about.

Calmette Proposes a System of "Sanitary Delegates."—To aid in the fight against tuberculosis, Calmette writing at Lille, in L'écho Médical du Nord, March 7, 1909, suggests that in each village some efficient person, a visiting nurse, or a mid-wife, be chosen to see personally to the care and hygiene of cases of tuberculosis. Such a person, as Calmette suggests, would know of cases of tuberculosis which are neglected, or incipient, and which need protection for their own as well as others' good. At Washington, in 1908, Koch finally gave up the older idea of hospitalizing consumptives, because of social reasons. On the other hand, as Calmette shows, a visiting nurse could superintend proper cleansing and disinfection. These visitors could be placed under some central direction. The spread of tuberculosis and its ravages seem to justify such methods.

MISCELLANY

"606" has been renamed; and has been put on the market in Berlin under the title of "Salvarsan."

A Little Knowledge.—A Berlin colleague, Dr. M. Herz, well observed to a patient whose habit it was to read medical books with a view to prescribing for himself: "Be careful, my friend; some day you'll die of a misprint."

Insanity Through Gazing Upward.—The cause of the mental unbalance of J. B. Cross, who died in an asylum for the insane at Kalamazoo, was considered by his physicians to be the unnatural position in which he had to hold his head while going about his work as a tree-trimmer. It is reported that on autopsy it was found that the bending of his neck caused the straining of spinal tissues.

The Slasher.—One of these strange perverts recently attacked four boys, stabbing one, aged 13, in the back on the left side, another, aged 12, in the left arm, a third, 12 years old, in the right arm; the fourth, a clerk aged 19 years, is said to have been struck by the same brute who "slashed" the boys with a blackjack, the skull being fractured.

The Future of Electricity.—President Ferranti, of the Institution of Electrical Engineers in London, recently predicted marvelous developments in electricity; he explained a plan for a universal supply of this force for all purposes, at one-sixteenth the present cost, and declared that when electricity was better understood it would probably control the weather, producing or preventing rainfall at human will! All things now achieved by coal can be better done by electricity; wherefore all coal should be converted into electricity at a few big centres and retailed from them.

Thanks and Emolument Well Deserved.—More than a year after his return from Peary's successful expedition to the pole Dr. John W. Goodsell, of New Kensington, Pa., received a letter from the President of the Peary Arctic Club of New York City, commending his work during that trying excursion into the dreary unknown. Every one of the twenty-five members of the party that went in search of the pole, besides fifty Eskimo men, women and children who joined the expedition at Etah, returned to their homes in good health—largely by reason of the care and skill of Dr. Goodsell. With the letter of commendation was enclosed a large check as a more substantial evidence of the club's appreciation.

The Voice Photographed.—Dr. Marage (not Mirage) of Paris claims to have invented voice photography. The sounds strike a small disk of India rubber, the vibrations of which are minutely and exactly reproduced on a small mirror. A ray of light is thrown on the mirror, which reflects the vibrations at various angles. A sensitive film unwound by clockwork receives the impressions of these reflections. The picture (so the inventor claims) will indicate whether the singer's voice be true, his tempo correct and whether his method of breathing be right. A true note is shown by a series of parallel and equal bands; a wrong note by a rough, irregular impression.

To Vivisect the Bad.—Dr. B. M. Ricketts, of Cincinnati, advocates under certain circumstances the subjecting of criminals to surgical investigation; "vivisection in both animals and man is essential for a more rapid progress in medicine and surgery." Criminals should, considers the doctor, be given an opportunity to accept the right to subject themselves to the hands of the experimenter, even though their lives might be jeopardized. Their reward should be their liberty; "which they are oftentimes promised for less important service. Capital punishment should be abolished, for life should be taken only in self-defense; the evolution of punishment for crime is fast approaching the elimination of the death sentence, "because certain surgical measures, together with disfranchisement and labor, will long obtain. These views concerning experimentation on criminals were held many centuries ago; possibly civilization has since made some advances.

How To Become a Centenarian.—Mr. Josiah Zeitlein has recently died in Brooklyn (a community with an excellent reputation for longevity in its members) at 106; he saw Moscow burned by the Russians at the advance of Napoleon. He has bequeathed humanity a priceless heritage in the following rules for attaining or exceeding the century mark: "Don't worry. Never be in a hurry. Don't eat what you call quick lunches. Take but little meat, especially in early life. Sleep eight hours a day. Never fool with doctors, and don't go into a drug store except to get a stamp or to consult the directory. When you reach the age of ninety years you may do about as you please.

A Very Sensible Clergyman.—At a recent meeting of the Society of Medical Jurisprudence to discuss psychotherapy, the Rev. Dr. Remensnyder observed: "Physicians as trained and expert observers of mental and bodily diseases are better fitted than ministers, practised in the cure and care of souls, to discern the origin of disease and to remove it. Every alert physician practises psychotherapy more or less every day of his life. As to a clerical clinic, I do not believe in such an attachment to the Church. Sensible people say, 'What is the matter with the Church that ministers are leaving their spiritual calling to meddle with the practice of medicine? We will go elsewhere than to the Church for our religion.' And they will and will be right in so doing. Let us each keep to his own sphere and it will be far better for our respective professions and for the highest good of your patients and clients and of our members."

A Terrific Plague of Mice is reported to have afflicted a Canadian district beyond Cape Breton. The whole country seems to have swarmed with the mice, which burrowed underground and excavated a network of subterranean roads. They began on the hay crop, cutting it as it stood in the fields. They next attacked grain; so that forty farmers saved only seven bushels. In the potato fields the diggers, on opening up the drills, found little more than the stems of the largest potatoes left in the ground. The mice carried their destructive work to the woods, stripped the barks from the saplings, entered houses, cut their way through walls and threatened to destroy clothes and household furniture. No remedy seemed effective. Pits were dug to entrap the mice and myriads were thus destroyed; nevertheless the plague seemed unabated. The farmers dared not use poison, fearing to pollute their wells, and the streams from which their cattle drank.

SANITARY SOCIAL CLEARANCE.

BY GEORGE B. H. SWAYZE, M.D., PHILADELPHIA, PA.
Late Professor of Obstetrics in the Medico-Chirurgical College and Dean of the Faculty.

THE candid reasoner, who cares for substantial advancement of the good of society, is compelled to consider problems of human interest as they exist. When earnestly sincere, he cannot wing circles of amusing thought over ideal curves of speculative diversion. A barricade of airy strophes, a sweep of painters' colors, are but filagree of melting moonshine in any sterling purpose intended to suppress an infectious human plague. No one has exactly numbered the concourse of graceful forms and chaste spirits which have physically and morally succumbed to conditions of social environment that transformed the sunny delusions of a day into the blight of midnight—the midnight which could greet no expected sunrise of sanitary restoration.

"Doctor, do you think there is much white slavery in Philadelphia?" The interrogation came abruptly—asked with the suddenness of impromptu side-thought—asked by an unusually interesting, even fascinating young woman of eighteen, glancing her large brown eyes upon me from her book one sultry August afternoon. She was temporarily abiding with us from a modest country town, to devote a few weeks in the languish of French and German decoration, scheduled in the U. P. Summer Course of intermediate study. Her father a country minister, pastor of a thriving congregation. Her mother an active worker in church interests. Her youthful associations usually among religious circles. Had never before mingled among the contrasting penchants that red-letter and hemstitch the intricate web of life in a big city. Her spontaneous question rather startled me. It was apparent that strange thoughts obtruded in spite of her language lesson. Her innocent frankness indicated that her mind was yet in its mellow dawn of understanding. But she had begun to peer into the mysterious vista of an unknown side of life. Was it time to lift the curtain that would reveal the sickening conditions there?

"Yes and no," I replied, "for there are so many classes of people woven into the fabric of population here—so many phases of slavery found in this evil world—yes and no! But you doubtless now have in mind," I continued, "what is implied by sexual slavery—the abusive condition where reckless girls or women yield their persons to the degrading practice of gratifying the sexual passions or desires of immoral men or youths—usually for a tithe of money for recompense—but which is liable to be at once claimed for bed and board by the vulgar keepers of the houses, classed as resorts of ill-fame, where these unfortunate young creatures are being kept or detained." Purposely I chose to compress a gist of correlated information into my form of instruction.

"And how do these degraded girls come out?" she pursued.

"They presently become disgustingly sick, inflamed with a peculiar form of infectious private disorder called 'The Bad Disease'—contracted from their impure sexual associations with the physically corrupt class of men who constantly seek such relations with these possibly forced but marketable girls in shameful traffic. When this offensive disease becomes seated, there follows certain exposures of the girl's person because of the necessity for local treatments. But, furthermore, when girls become badly diseased, the keepers of these disreputable houses do not wish to care for them or to longer harbor them, and the diseased ones are shipped away to take chances in the city hospital for the poor. It is a rare thing for these girls or women to either become or to stay entirely cured. Their lives are more often wrecked by the mistakes of their folly."

"It is awful to think of such terrible things, doctor! And I have heard girls at the Summer School jest about this sort of thing as leading a gay life and getting lots of fun!"

"Such girls may be romantic and venturesome by nature. They may frivolously trifle, at the outset, with serious risks to womanly respect and honor, even to personal slavery before the end is reached. We should not, however, suppose that in the condition called white slavery, such girls, if in right senses, are often forced to it by physical capture. Rather they are cajoled and enticed to semi-voluntary risk or venture. Often they come from country locations, or from one part of the city to a worse part, on romantic escapades to seek more easy mode of livelihood—to find fancied release from parental authority—to gain profits promised by designing men who play fox to trap unsuspecting geese or girls to lives of shame in 'fast houses,' where the fascinations are atrocious and the profits destructive to the happiness of health and moral sense."

"Doctor, how did we come to start this fearful conversation?" she asked. "It grew from your question about white slaves—a very appropriate problem for all young women to seriously consider," I explained as I noticed the shiver of repugnance that ran through her thought. With vividness memory reminded me of the thousands of other interesting young women, with trustful hearts, who yearly become the prey of accomplished rakes and crafty roues who sedulously study artful devices for enlisting woman's interest, designedly for purpose of evil and to lead yielding victims across the chasm that separates peace and moral purity from the wreckage of sensual degradation. With the relief of a sigh she murmured as she resumed her book: "Indeed I will be glad when I can get through with this Summer Course, to return to my own safe home!" The talk had not missed its intended mark.

In the scurry with present-day temptations capriciously indulged by jostling men, hundreds of young women who contemplate honorable marriage fare scarcely better physically than do many of the *demi-monde* unless the fiance can timely fathom the established moral stamina of the man who seeks to own her in the rites of married life. As a rule men of loose sexual habits specially desire to attach to themselves in marriage innocent and sexually healthy young women on whose honor they can depend with daily confidence and trust. Young women who think of accepting a candidate for marriage needs to reason out the intricate social problem. Venturesome men who before marriage, or after, will sexually associate with promiscuous girls or women, and secretly contract a contagious disease that is seldom entirely curable, and hence with which wives are eventually contaminated, are men unsafe for connubial trust. The unsuspected mystery of the wife's broken health is seldom revealed because to do so would

naturally shatter family peace and unity. The immense number of surgical operations, by which in the last generation women have been unsexed by removal of their ovaries and annex parts, are severe demonstrations of the frequency with which women have been contaminated by men of indifferent caution.

A well-informed contributor of the MEDICAL TIMES, June, 1909, quotes authoritative but appalling statistics concerning the sexual scourge and consequent invalidism imparted to wives who represent socially innocent and pure women in the hidden or secret trust peculiarly incident to the marriage conditions. Marital contamination with venereal infection has been an astounding increase in otherwise respectable families during the last forty years. The private, also the hospital treatments for "womb diseases," have been so common as to establish the branch business of the gynecologists, who demurely introduce their speculums and medicated soluble bougies, apply their assorted washes or remedial pledgets to the private parts of women with the cool formality of the doxology, but which registers no statement of the sexual infamy that doomed the unsuspecting wife to discomfort and humility. Let me repeat—routine sacrificial cutting operations for removal of "pus sacs," for excission of diseased but possibly only neuralgic ovaries and annex tubes, or worse—mutilations that unsex woman for life—have been methodically practiced on the female victims of sexual contamination conveyed by men to whom loving and trustful wives looked for happiness and safety during life. Rather than to have legally permitted many of these diseased men to become transmitters of their staled contagion to the lives of their innocent wives and children, it might have proved great gain for society and the world if the authors of such foul dangers had been subjected to the sanitary operation of surgical castration, and the timely elimination of the fires of sexual craving, prior to making unworthy alliance in matrimony with virtuous mate. The social values of a race of syphilitics in the world should be very seriously questioned by our profession, by careful lawmakers, by awakened public sentiment as guardian of public welfare.

It requires clean-minded writers to face unpleasant public duties. The contributor already referred to tells us with no quibble that the Special Committee appointed by the Medical Society of the County of New York in 1901 reported that about thirty per cent. of the cases of venereal diseases in women treated in private practice in New York were infected in marriage. Also that the Committee on Sanitary and Moral Prophylaxis appointed by the Maryland State Medical Society in 1907, showed that nearly forty per cent. of the cases of specific infection in women treated in private practice in Baltimore were contaminated in marriage. That the President of the Gynecological Society, at the meeting of the Congress of American Physicians and Surgeons in Washington, in 1907, stated that about seventy per cent. of all the work done by specialists in diseases of women in this country was the result of gonococcus infection. I quote these eye-openers as disclosed by three great Medical Societies—handboards that point also to all the great cities of the United States and intervening country locations. Personally I have found the need of special service in private diseases of women relatively as common in rural communities as in town and city practice. Men from the country when visiting cities often think it a smart opportunity to grasp the novelty of obtaining intercourse with a woman or women of the town. They take in the sights. They propose to "see the elephant" in the easy-hiding haunts of its torrid zone. After a few days of exhausting revelry they return home sexually fagged. In a few days later discover that they are diseased. Assuming that it is only a transient incident they secretly dabble awhile with some over-confident druggist or drug clerk who comprehends little of the gravity involved. If yet in single life, the hero risks the responsibilities of marriage and carries his dribbling gleet to his spouse. If a married man, he risks the formality of continued sexual habit with the wife, rather than excite suspicion by unusually extended avoidance. Some way, some how, inflammatory infection is conveyed to the wife of the country tradesman, the country farmer,—and a list of invented causes are soon brushed into shape for the scapegoat. These are usually the cut-and-dried excuses—got caught in the rain—went with wet feet—suffered a searching chill—took a bath at improper hour—exposures and fatigue at house cleaning! So the be-fooled woman must bear with her relapses of chronic discomforts, must resort to frequent vaginal douches, must have a doctor try the help of treatments, must at some time endure serious cutting operation—while the real criminal serenely poses as the object supremely innocent as the author of the disguised wrong.

The question recurs. Is venereal poison spread abroad from country centres? It seems that men bow so low to nothing as to erotic passion. Will refer to an instance. A versatile young man of thrifty circumstances and of accepted social standing at home. Five miles from town, in the seclusion of mountain distance, was a modest-looking road house with stabling accomodations for a pair of horses. This lonely house extended welcome and special conveniences to salacious guests on moderate terms. Accompanied by willing comrade of like mood, my patient had driven to this dissolute resort on a Saturday evening,—remained over Sunday. After a night and a day of sexual dissipation, the young society beau returned home severely fagged. In a few days discovered had been burned to the core with gonorrheal infection. Treatment for active repression was introduced by a hopeful town drug clerk. When I was called to the case one of his testicles presented an orchitis the size of the man's fist. By acute abscess the testicle sloughed away in form of purulent matter through the opened scrotum. Being engaged to a charming young woman, he concealed the debasing facts by cunning fabrications as excuse for his temporary lay-up in bed; but later on had the audacity to marry the innocent girl—who was doubtless kept in ignorance of his degraded loss of one testicle. My early removal to this city let the outcome escape me. He said his companion friend on this escapade also contracted disease in milder form. Are specific diseases scattered from country centres? If fifty men in a year were infected at that sequestered nest of incubation on the lonely mountain side, how many wives or others allied to those fifty would afterward bear the penalty of enduring sexual contamination! Multiply the corrupt productions of one den of vice in one year by those of fifty thousand dens of contagion in our own country,

and possibly we may begin to grasp an estimate of the degenerate conditions prevalent to very injurious degree throughout the land. If the measure of this harmful prevalence was limited to one year and then done with, the world might obtain glimpse of sanitary freedom from venereal contagion in a generation. Instead of that the contagion is on continual spread through all generations. Any serious review of the expanding conditions of infection through society at large in country and town or city, there exists but narrow protective guardianship of health or constitution,—little assurance of the building up of sterling types of intelligence and honor among the people at large. Careful examination of the unfolding history of current affairs shamefully attests the fact that the masses, including those in all avenues of business, lean to the down-grade of degeneration. The daily press exhibits appalling proof that mental and moral integrity are on the fading line of function, of habit and reliability. The social conditions were never so vacillating, so reckless, so demoralized in sexual relations, in connubial relations, political relations from highest to lowest trust as at the present day. The value and dignity of human life should be rated according to the ratio of the value and dignity of its accomplishment as an asset of existence. It is insane ambition where men or women engage in expending vitality that corrupts social conditions. The study of drug medications to heal continuous lines of social abuse against health and progress is a continuous pantomime of gestures that never reaches the foreground of effective relief.

"Before I was married I took and gave irrespective" —said a boastful husband to me soon after his handsome wife had given birth to their first and only child—a delicate daughter upon whom was lavished much loving parental care—but who died at nineteen years of age together with her babe at first confinement. I have not forgotten the sudden surprise this boastful man's wife gave me one morning while yet in her accouchment bed as she excitedly assailed her husband after her infant had begun to nurse from the nipple. The husband's eyes appealed to me for help. A crop of cutaneous eruption had broken out upon the lady's breasts. Nothing unusual appeared in the infant's skin. Fortunately the mother's bosoms healed off in a few days by the use of dry treatment—and family peace was preserved.

The contaminated woman suffers most in her person, her mind, her offspring. Woman is the giver and natural nurse of the family. Looking backward for only fifty years, if all married women, all mothers, had been protected from the contaminations and discomforts of venereal tarnish, an improved grade of population would now be greeting the world. A people can never be expected to reach their best of development and integrity, unless the mothers of the people, women who nourish the infant in utero, who construct form and endow mind of offspring from the nutriment of their own blood, can command a clean clearance from disabling physical infirmities which straightjacket their reproductive functions in the sanctity of trusted connubial acceptance for fulfilling the great and holy mission of sexual love by reproduction. If defective grade of seed be planted, and the nurturing soil be feculent alluvial sediment, what can the crop be like? This illustration awkwardly symbolizes the parentage of children grown from the abnormal seed and soil of venereally diseased human stock.

The most forceful trend of nature prompts to repeat or continue itself. If in normal, sanitary or sane line of evolution, this trend is not a continuous menace to the welfare of social progress. But if the trend of human propagation run erratic course regardless of civil propriety, it is degenerate in natural results, pestilent as the product of existence, and there should be devised a decided corrective to abridge the virility of sensual depravity in its riot of evil—an abasing riot of virility reaching for and committed to the game of heartless wreckage of female virtue, to indifferent spread of infection, to starting vexing trains of suffering and remorse. If a man who is hungry enter a shop and steal a loaf of bread, no social wrong has been committed, but he may be whisked off to a term in prison. But the man who feloniously gains a conquest over virtue, or who secretly syphilizes his wife and unborn children is not confronted by statute or court that rules on the deserved degree of penalty. While we rationally recognize the welcome fact, as the human is constituted, that normal sexual relations between man and wife promote physiological and mental balance for both amid disquieting tensions of domestic experience, such benefits cannot reliably prevail outside the province of honor and physical safety. In social life unsanitary cohabitation disrupts the mission and blessing of love. In the reproductive system is centered the expression of the master-impulse of life. The attraction of normal sexual desire is the magnet of natural force between the sexes. But when sexual desire is perverted to the injury of the race, like other special abuses it should be met with legalized barriers which transform a maddened passion into civil obeyance to personal and public welfare. To change erotic proclivity, the erratic impetus of nature needs be modified. A legal fine, a transfer to a term of imprisonment intended as punishment, never changes the nature of the committer of wrong. He pays the money estimate of his fine—he emerges from his prison restraints—but with the same nature which prompted his transgression—and which impels to repetition of offense. In sexual debauchery there remains but one radical remedy of reform for the male, namely the transformation of the erotic mania of his nature by the corrective of castration. Every syphilized yet sexually rapacious man, more harmful to society, to wife and family than is a lion loosed upon community, should have his desire annulled by castration. For two generations surgeons have been making a specialty of removing sexual organs from women in diseased conditions of the same, rendered so by extensions of inflammatory inoculations in marriage by men who should have protected their wives by wiser precautions. In reference to the unsexing of women by removal of their ovaries, the late eminent Professor Goodell wrote it down in his articles, and had it printed —"spayed." If women must bear the obloquy of being "spayed" because of man's sexual abuses, it is time to level the tables of justice by castrating the guilty man. Men hold their virility in more precious esteem than they prize money or business reputation. To such there can come no penalty for evil sexual doing so dreaded, so strenuously to be avoided as the humility of privation of testicular capacity. The impending liability to legalized castration of males for sexual abuses against the

sanitary welfare of women would prove the most fundamental incentive to caution and self-restraint that could be inaugurated for radical defence of the welfare of the human family. And in the fact of craving by men who convey to women the seedlings of sexual contagion, no measure of reform could equal in effectiveness that of obliteration of reckless appetite by means of the sanitary operation now advised for candid thought. No ordinary penalty has effected the least protection to society. The wives and mothers of the world deserve something better.

It has long been supposed by gentle reasoners that improved education concerning sexual values would rectify sexual abuses and afflictions. While it is true that in tame natures such education might work a measure of reform, it is also true that in the sexually venturesome a lesson or lecture can never eradicate the internal fires of natural depravity. Ethical instruction alone does not appease ravenous appetite. Among intelligent men the more they know concerning risks the more facile they become in desire to be quickly straightened out from results of entanglements incurred during a temporary absence of their wives. Just now I think of five cases of well-posted husbands who faced gonorrheal complications contracted from substitute associations embraced during moderate absence of wives. Three wives of the five subsequently came also for relief from inflammatory sexual conditions. One, a splendid woman, well-bred and highly gifted, became despondently syphilized after the manner developed by her husband, in consequence of which it is believed that she committed suicide. If each of these intelligent husbands had realized impending liability to deprivation of testicular ability as penalty for dangerous connection with loose women, they would have timely respected their vows of marriage chastity. There is a perversity about some men—especially young men. The more they learn about a special thing the more they want it. The problem of extension of education has failed of definite results.

Thirty-five years ago a fine quality of brain and much money were devoted to the study of social purity by "The Moral Education Society of Washington, D. C." An elaborately filled Monthly Magazine, "The Alpha," was started in 1875 under the able editorship of Mrs. Winslow, M.D., who was President of the Society. I have copies of the remarkable "Alpha" publications for five years. The amount and variety of social purity papers presented in the time of publication is marvelous. It so happened that I had a spirited correspondence controversy with Editor Winslow pending much rainbow attitude of her "Alpha." I had sent the magazine a short article to represent the "other side" of its strenuous position on the sexual problem. My paper was politely returned with counter argument in nervous penmanscript by the declining editor. I answered that the leading doctrines taught in "The Alpha," though ideal and beautiful, were visionary and impractical as human nature is constituted. She argued that the perversities of human nature could be trained into sanitary obeyance by ethical education. I argued that human nature of many must be practically changed to adapt it to harmony with ethical ideas of visionary conditions. The pig which persistently slid through a forbidden fence required the practical corrective of a hickory yoke upon its neck to prevent depredations. The editor of the brave "Alpha" never could abide a word to throw light on the actually practical side of the harrowing problem. If the high and heavenly aspirations advocated by "The Alpha" had been realized in practical life, the world to-day would be upon its knees giving thanks for the complete triumph of social and sexual education.

In face of our operative law, its execution and penalties, it has become apparent that a growing class of men in various communities engage in the infamous debauchery of what is known as the white slave traffic. Recent instances are too frequent to report at this time. The atrocious schemes of these men work in a way because of weakness and impotent trust of the known material they can make use of. The trend of thought of these men stoop to little higher, it would seem, than the lowest round of sexual immorality. One might as well stand on the blazing deck of a burning ship to read the Declaration of Independence, as to waste time in reciting to such men the moral values of sexual education. The victims they seek they will somehow find. When proven guilty and sentenced to punisnment in prison, every such culprit should be also brought to a revolution of thought and ambition by the transformation of castration. Nothing short of that can effect reformation among that mongrel set of castaways. We should handle evil doers as we find them. Syphilographers have been giving us tips in the technique of specific disease and of the prowess of certain combinations of drugs as remedies, but they do not exhibit their teeth in methods of progressive extermination. For more than fifty years I have gleaned their literary offerings and learned little of progress in reducing infection of this most tenacious social scourge. Personal health and public welfare are entitled to relief emphatically obtained from the disasters of specific infection spread abroad in the chambers of erotic passion. The inference seems to be that specific disease in society is but an established commodity. If we all join hands in covering social villainies against sanitary comfort and progress, our fine talks explaining the nature and treatments of venereal disorders are like repeats of the phonograph, listened to for transient entertainment. The program only ends in the usual fruitless way.

What can be done? Bravely deny that gonorrhea and syphilis are respectable contagions or worthy to be respected by physician or society. Deny that any man has the right or privilege to convey into his home the degrading pestilence of social evil conditions. Deny that the guilty promiscuous indulger in venery shall be cloaked by the soft charity of social sentiment. Declare that public sanitary safety is paramount to all concealments and mischiefs of adventures with women of ill-fame, by which men prostitute their social and sexual honor, and forfeit exemption from penalties of person which tend to annul rapacious cravings which are a living menace to the innocent. Let every male subject who contracts deep-seated gonorrhea or the evidence of syphilis be relieved of the craving desire for sexual intercourse with women by the subduing operation of surgical castration. Then the demand for "fast houses," for female prostitution, will obviously abate, society will clean the current of her blood, and the world will timely demonstrate the dignity and happiness of its Sanitary Social Clearance.

1726 North Twenty-Second Street.

SCIENTIFIC VERSUS PRACTICAL IN MEDICINE OF TO-DAY.

BY BEVERLEY ROBINSON, M.D., NEW YORK.
Emeritus Clinical Professor of Medicine University and Bellevue Hospital Medical College, etc.

NOWADAYS we are hearing constantly of the great advances in medicine and surgery. The good old days of practice of medicine, when a great deal of it was empirical, or mere guess work, have given way to the accurate researches of the laboratory or the physical findings in the hospital with instruments of great precision. One would believe, if thought and intelligent appreciation were banished, that for all this one is greatly to be thankful and almost without criticism. Unfortunately, even so-called science is ephemeral at best, and what is seemingly true to-day is not true to-morrow. What is known as empirical is not infrequently the wisdom of the ages and of a host of good observers everywhere. Of course, there are many fetiches which have come and gone and their once great popularity is shown to be vain and illusory. It remains true, however, that the wisdom and horse sense of the old practitioner, when dealing with disease, is frequently more valuable really to patients than the most refined and latest acquisition of the junior physician, even though his talents may be unquestioned. Thus it is, also, that the so-called expert advice of the very best specialist is often narrow-minded and by no means as valuable as one is led to believe by the prevailing bias of our time. I don't want to be misunderstood. Of course, in difficult, obscure cases, which, after all, are rare, relatively, we should avail ourselves, if need be, of the most advanced knowledge in any and all special directions. But even then, and while it is a great mental satisfaction to the honorable, enlightened practitioner to establish the diagnosis and prognosis of a case as accurately as possible, so far as the judicious care of these cases is concerned, it does not make much difference practically. We have only just so many reliable remedies in the drug line—and they are not many—and as to nursing in a rational and useful way, or the employment of physical methods of amelioration, they, the really useful ones, are fairly well understood by the bulk of good practitioners of experience. The great burden of the family physician is, after all, that he is almost forced to affirm a diagnosis at a time when neither he, nor any one else, can truthfully say he knows or is sure. When days of anxiety and care have elapsed and many things have been tried, then is the time for the consultant to be brought in and figure in the case. His rôle is relatively a simple one and free, at all events, of worry or care. He affirms, or is doubtful; in either case, he absorbs the credit in large amount. Does it occur to him, as a rule, to establish in the minds of patient and relatives or friends, that, placed in the position of the family physician, he could have done no better; probably not half so well?

Another thing quite worthy of note and which should be driven home and made cardinal principles with every thoroughly square consultant—i. e., that he should get the history of the patient as fully as possible from the family doctor; that he should examine the patient in every way, or as often as he really believes is required, but let him ventilate no personal views of the case to family or friends, and certainly never to the patient. He may and should give his mature judgment and opinion as to diagnosis, prognosis and treatment to the practitioner, but at the same time adding, and mainly as regards treatment, that new, or different treatment should be instituted only with the absolute approval of the man who must hold the fort—come weal, come woe, —i. e., the family physician.

Now just a word about what is known to-day, but was not known only a short time ago, and may change soon again. There are different kinds of tubercle bacilli —some virulent, some not; there are different kinds of diphtheria bacilli—some virulent, some not. Does the virulence depend upon the soil in which they are planted, or does it depend upon a noxa that certain bacilli have and others have not, although of same form and dimensions under the microscope? I do not profess to know absolutely, but I do know what I believe now and have for many long years, i. e., that the germ theory of disease may be pushed to the *reductio ad absurdum*, and is so at present in the two diseases I have just mentioned. We build sanatoria, spend large amounts of money, get the whole people aroused to the fight for humanity against the great white plague, and then return the patients to conditions which had much to do in causing the disease originally, although without the original soil might have remained innocuous. Is it rational, or in any way desirable? Let us change absolutely deplorable living conditions, — lack of air, ventilation, sunshine, proper food, among the poor,— and tuberculosis will be throttled as far as may be, but in no other conceivable way.

The latest Bulletin from the Department of Health, City of Chicago, states in speaking of the spread of diphtheria, that many cases "came from people who were carrying diphtheria bacilli in their throats but were not sick." This may be true at times and in certain epidemics, but I confess, in spite of the fact, as stated in the same Bulletin,* that "only a small amount (diphtheria), was being spread by those who were violently sick," I would much prefer to have my family, not to speak of myself, take many more chances of contagion from those who are "not sick" than from those who are "violently sick." The curse of our day is, in my judgment, the furore for surgical operations, and lucky is the man or woman, or even child, who

*December 17, 1910.

can escape from one for many years. As to operations for appendicitis, they are simply a craze; in many instances I am convinced the patient would have done better and run less risk of life or disability if mere rational medical means had been persisted in. Later, —it may be long delayed, but I trow not—one operation will be performed where ten at least are now. Then, and truly so, an operation will be considered as opprobrium of modern surgery, just as a dose will be in modern medicine, because it will mean ignorance, stupidity, selfishness,—which failed to prevent disease which is readily preventable if wisdom and humanity prevail.

42 West 37th Street.

Eskimo Babies, it is alleged, are seldom weaned before the fourth or fifth years; but are taught to chew tobacco and to swallow the juice even as early as the ninth month. The customs—general with both sexes —of inhaling tobacco smoke and swallowing tobacco juice seem to be of no recent growth. No evil results of either practice seem to be apparent.

HEALTH NOT THE INCIDENT OF CHANCE.

The Food Question All Important.

BY ELMER LEE, A.M., M.D., NEW YORK.
Ex. Vice-President, American Academy of Medicine.

SICKNESS, suffering and premature death are the most constant and expensive factors in human life. From childhood to old age fear of sickness and dread of death occupy a considerable part of the thoughts of nearly everyone. Scarcely one home is exempt from interruption to its peace and happiness, as a consequence of disease.

Sickness, in its different forms and degrees and consequences, constitutes the world's greatest burden. War, horrible as it is in maiming and killing men and destituting families and orphaning children, nowhere equals the losses occasioned by pestilence and disease.

Watching over the sick and weeping for the dead fill many hearts with pain and distress. Long familiarity with human anguish and disease, deformity and degeneracy, of body and mind, blunts the sensibility and encourages acquiescence in the misfortunes of life as we find them.

But, accepting anything short of the best that is attainable, fails to do justice to the privileges of birth and life. The desire for better things is in us all, and the longing to have health and happiness, and escape disease, pain, and premature death, is within reach of all those who are capable of appreciating truth and enforcing it.

The charm of living, implies health and freedom from disease, and each human being enjoys or forfeits his delights exactly in proportion to the use or abuse of them.

Disease and suffering are penalties exacted for disobedience of natural and beneficent laws, which are fair to all alike, no favoritism, no prejudice. Failure to discern the intent of nature and heedless disregard of her warnings yield pain and sorrow.

Health is right knowledge rightly applied. The absence of knowledge and its enforcement explains universal invalidism. Each man is an organized agency of the universe subject to its laws and processes, chemical and vital. Health is melody, disease is discord.

Social rules and precepts are without number, free advice, or counsel for pay, wait at every corner, yet the tragedy of human woe is not checked. The appeals to high heaven are in vain, the hopes of the dreamer, searching with blinded eyes for the impossible cure, fail of realization.

Medical men are most earnest, self-sacrificing, and yet seldom save themselves from similar misfortunes as those of their patients. The quack, charlatan, healer, metaphysic, mental scientist, magnetic and similar cults, each contain grains of usefulness, but the truth is so mixed with tradition, superstition, deception and misinformation as to further add to the plague of babbling tongues.

If the profession of medicine was performing its whole duty and was itself free from phariseeism and pseudo science there would be less dissatisfaction with doctors, and little excuse for laymen to found societies for treating or preventing sickness.

I regret to say it, but physicians, who are themselves sick, have little to recommend them to their patients. To be capable of helping the sick, a physician should exemplify such capacity by himself having excellent health.

Is it possible to be well and stay well? Yes. Is there a rational method of daily living that is safe, and that will preserve and prolong life and health? Yes. It is the moment to take hope, and, from dispair, to awake to *opportunity*.

That which man would have is attainable, if it be health let a right effort be made and success is certain. No sufferer is doomed if will remains, and there is courage and strength left to enforce right action. Wealth of health are at the feet of each one, it is not in a foreign country, it is here that it is to be found, the door is open for all, and there are no limitations or restrictions, save that each applicant is to use his reason and experience for his guide.

The human organism is adapted to a life of one hundred years, and will attain so much if rightly used. A cork will sink when a weight is attached to it, though it is not natural for cork to sink, and it is so at all times and under all circumstances. A sick human being is the result of a load that is unnatural to it, but remove the weight and in due time health returns. It is *opportunity* to know of what that weight consists and how to put it off. Imperfect and insufficient nutrition with impure drink are the principal destroying agency of mankind. Perfect nutrition and pure drink are, as I believe, to be obtained only from the vegetable kingdom..

AIR.

Air is the most important factor of all the agencies which contribute to animal life. Food and drink may be kept from the body for a considerable time without serious damage, but in the case of air there can be no cessation for more than a few seconds without fatal consequence. It is the life sustainer and a food to the vitality.

Pure air is inexhaustible and non-corruptible, and equally accessible to all. The world is surrounded with good air to the height of many miles, it is not better in foreign lands than at home. Human habitation may be at any place on the earth and so far as the atmosphere is concerned there is no cause for detriment to health.

The air of any land, or city, or village, at home or elsewhere, is not disease laden or deadly, the air is in fact very similar the world over, be it in the islands of the sea, or the great continents of America, Europe, Asia, Australia, and Africa.

Man is always in haste to lay the blame for his mistakes and incident sickness upon anything except his own acts or bad habits. There is much hearsay rumor that the climate of the Phillipines, of Panama, of Cuba and the Hawaiian Islands is "deadly," whereas the fact remains that the air there and everywhere is adapted to the creature who rightly uses it.

There are climates, it is true, that afford special advantages for human pleasure and employment, and it is wise to make use of them. Man may exercise his choice of selection of a home in a hot or cold climate, in a dry or wet climate, upon the mountain or in the valley, and the air for human use always remains safe and agreeable.

But when air is confined in a closed room it is deprived of its full usefulness, and such shut-up air gradually loses more and more of its life supporting quality. The best air is sunlit and wind stirred, and those who want the best, will seek a life in the open as far as possible.

According to the economic and inherited forms of

society it is impossible to always get needful ventilation, so that impure air must sometimes be endured for the sake of accommodating others. Such instances of impure air breathing fill only a small space in the length of a day, and temporary injury to the lungs and blood may be soon rectified.

But oft repeated and long continued impure air respiration leads to injury and permanent impairment of the health, and is enough to start the decline that will consume the life. The best is the out-door air, day or night, rain or shine, summer or winter. The stirring air is best for all, give up fear and look upon wind and weather, the sunshine and storm as kindred phenomena, just as man himself is one of the world's phenomena.

Drafts of air are sometimes injurious or to be dreaded, but from the many afflictions which form a large part of life, suspicion and distrust of the fresh air becomes a habit. The air is always pure if in motion, and if not confined in a closed room.

Pure air is always attainable if the outside air is only allowed admission as gentle ventilation. The window is the simplest, and most effective ventillator. Be careful to have it open one inch or more top or bottom, or both, if the season permits.

The world is man's home and it is all suitable to his health needs, he may travel for pleasure and study, but it is seldom that lost health is restored by long journeys to distant places. Right living performed daily and hourly by the individual can save and keep him, nothing else in all the world can do it.

FOOD.

A ceaseless and relentless hand is laid on almost every living or growing thing to provide material to satisfy human appetite. Nothing of real or fancied value as food is missed by man, determined to have all there is to eat and drink.

The natural appetite is satisfied with natural food, and natural nutrition gives the basis for highest and best man and womanhood. The history of the primitive man we know, but the possibilities of the perfected and complete man are not yet discernible.

Adequate and safe food comes to us from the soil direct, not through another animal, except to the infant fed on the mother's milk secretion for the space of a few months, there can be no shifting of responsibility. Ample and suitable organized plant food material became co-existent with the development of human creatures. Wild animal may feed on animal, man is above it.

I find that the proper preparation of vegetable kingdom products exactly meet the bodily wants as the basis for nutrition for all ages and classes of human life. While animal food materials may be useful and desirable in emergency, plant food products are the best for man under all conditions.

Much variety is not a demand of the natural man, but more properly the craving of some form of habit or degeneracy. There are whole races of men of sturdy and enduring strength, subsisting and thriving on the natural products of the field to the exclusion of extensive variety, or flesh food. The work and patience of the rice eating oriental outrivals the endurance of such as live on greater variety and eat much meat.

Meat eaters are not able to boast of advantages that do not also attend those whose food is a vegetable diet. In the selection of edible material, taste and means to purchase it, play a most important part. The habit of a varied and mixed meal thrice each day is practiced in the homes of all classes in this and other countries. There are few who stop to think whether it is right or wrong.

Sickness is nearly or quite universal among civilized nations, and less in degree among lower grades of mankind and even rare in some primitive races. Eating to excess of animal foods if frequently repeated, leads to certain unpleasant consequences. It is much more than probable that sickness and many premature deaths are directly due to the fatal error of crowding the body with more fish, flesh, oil, milk, butter, eggs, coffee and other artificial drink than it can bear.

It is a nice point to determine as to the exact relation between the bodily need and its supply, i. e., not to under or over-estimate the food requirements under different conditions. Few have knowledge to that required degree, and it naturally follows that the many are paying a penalty in sickness and suffering for their mistakes.

Disease is principally self-induced by abuse of the stomach. Daily mistakes in eating, outbalance in the long run the inherent tendency to be well. It is reasonable to assert that, it is what is wrong rather than too much food, which is responsible for human pain and bad stomachs.

There are ample proofs to show that it is not a need of greater variety in vegetable, flesh or mixed diets that are consistent with health, but rather the use of any diet in moderation. The organism is able to assimilate food material of all kinds, if taken in moderation. Any diet may be healthful if proportioned to bodily requirements, so long as it is digested and assimilated. It is a great mistake to eat too much animal food, and leads to frequent fatal complications.

There is no precise weight of food suitable for all persons, as each is an independent consumer, and has necessities peculiarly his own. With few exceptions, every class of society abuses the pleasure of appetite, especially in animal eating and impure drinks, and therein lies the chief explanation of bodily and mental disease.

Too much nitrogenous food and too much drink clogs the system with rubbish, which remaining in touch with the vital fluids and solids too long, give rise to sensations of distress. Such sensations are the symptoms of infiltration, sedimentation, contraction or expansion and the signals of warning, that disaster is ahead unless the course is changed.

The many indiscretions in taking unsuitable food furnish ample cause for weariness, heaviness, pain, fever, delirium and deformities. The perverted appetites, arising from misdirection since childhood, which fill the world, certainly afford enough object lessons, but they are seldom heeded.

I recently passed through Bleecker Street at night, amidst scenes of social participation in intemperate drinking and eating for pleasure's sake, and watching the human spectacle, I could not find it in my heart to interfere with their social pastime. Life is hard, at best, and it requires effort almost constantly to avoid indulgences that tend to shorten earthly existence.

Three full meals each day, if favorably proportioned

and composed of properly and accurately cooked vegetable material, are consistent and not too frequent. Two meals are seldom enough and one is totally insufficient. The habit of taking three meals a day is wisely established, it would be next to impossible to change it, so it is better to adapt ourselves to conditions as they are. The main point hinges on what food substances are eaten, how much, how prepared, and how it is eaten. How to eat is a fine art, as practiced and understood, but few persons possess the art in these days.

How to eat to live for health, in accord with knowledge and intelligence, creditable to the Twentieth Century Man, is so important that it is worthy of every effort to acquire the art.

Waiting till noon or nearly the middle of the day for the first meal has been advocated and adopted to some extent, and while there is little to be said in favor of such a plan, the important fact of nutrition is embraced in the selection of suitable food and knowing the art and having the patience to carefully eat only what is favorable, clean and wholesome.

Seasoning of food encourages abundant eating, the same applies to vinegar, sauces and all sorts of dressings. The needs of the stomach are easily satisfied, but the artificial appetite created by the cooks, and the palate, is hard to satisfy. In the attempt to supply unnatural craving, sickness, pain and death are the logical conclusions.

It takes much care and discrimination to safely minister to the inner man. Pleasure accompanies the natural demands of a healthy organism, but moderation is needful at all times to check tendencies that tradesmen who have everything conceivable to tickle grow unawares into self-injury.

Great attention is bestowed upon mental, moral and religious training in our schools for children, but few children learn that highest lesson, how to live in accordance with natural laws. Greatest success in life is attainable if all life forces act in concordance.

The fireman in the boiler room exercises great patience and precise method in feeding the fuel to the fires, yet how inadequate is human feeding.

Only those who have learned the right way can safely instruct the children. It is a subject that is the most neglected in popular education, and calls for health kindergartens, to direct and guide the children in the light of the Twentieth Century.

Health is a result of right living by knowledge, rather than an incident of chance.

127 West 58th Street.

NEURASTHENIA—ADDENDA.*

BY JOHN AULDE, M.D., PHILADELPHIA.

THE conservative tone of the correspondence which has reached me in reference to my article, "Disorders of the Nervous System," has prompted the publication of the following addenda to the section in neurasthenia.

Before leaving this topic it will be the part of wisdom to consider in detail the factors or deviations responsible for its appearance, the fundamental basis of neurasthenia being an undiscovered realm. Literally, "nerve weakness," and defined as "a group of symptoms resulting from debility or exhaustion of the nerve centers," we have no definite or demonstrable evidence as to the nature of the cause. Theories in abundance have been advanced from time to time; analyses, abstruse, philosophical and physiological have burdened the pages of current medical literature, and authors have made textbooks top-heavy with recondite discussions developing their own peculiar views—the toxemic theory, influence of the ductless glands upon metabolism, endogenous cell fatigue, inadequate sexual reaction, constitutional and acquired as well as traumatic and senile forms, together with various clinical groups, but not until the presentation of the working hypothesis of magnesium infiltration has any attention been given to the chemical problem in nutrition, although one and all of these special, peculiar and intangible complications hark back to the chemical deviation.

Thus, while the cases recorded are typical, they are also characteristic, no two being alike clinically, but there is an unmistakable uniformity in response to treatment conducted with the single purpose—to promote magnesium dissociation, confirming the hypothesis that chemic deviation is the dominant, primary or initial factor responsible for the disorder. This claim is based upon the assumption that we are dealing with a constitutional rather than a local derangement—a diathesis involving the motor and sensory centers, the nerve trunks and branches, also the vaso motor nerves—which modify, regulate or control the caliber of the blood vesels.

It must not be understood, however, that this comprehensive scheme excludes the regional and local manifestations which are consecutive or secondary to the original deviation, because, while the immediate effects may be dffused and scarcely perceptible, the remote, indirect or secondary effects may develop with unexpected emphasis in various directions.

Studied from the anatomic viewpoint, we have magnesium infiltration involving the cerebro-spinal nerves as in locomotor ataxia; with nervous dyspepsia, so-called, we have involvement of the spanchnic nerves; when the brain structures are attacked we have melancholia, delusions ("brain-storms"), and dementia with insanity; consumption and tuberculosis, asthma and chronic bronchial catarrh follow invasion of the pulmonary nerve supply, so that pneumonia, pleurisy and influenza are found to be increasingly fatal; affecting the circulation, the effects are patent—more cases of apoplexy and paralysis, an augmented number of aneurisms, while heart disease alone is second only to tuberculosis in the aggregate number of deaths; the liver does not escape, shown by the long list of diabetics, the frequency of jaundice together with the numberless cases of indigestion, peritonitis, and appendicitis, secondary to passive congestion and engorgement of this organ; the kidney function as well as the genital apparatus likewise claim a share of attention in the study of the regional effects of the diathesis, the former with congestions, gravel and Bright's disease, the latter with a multiplicity of obsessions, physical and psychologic.

Turning now to the group of physiologic deviations, we have toxemia, arising from decomposition or fermentation as a result of impaired digestive capacity, or

*Advance copy from the Ms. of a proposed book, entitled "The Chemical Problem in Nutrition."

the development of systemic poisons as a consequence of reversion in cell function—musculo-toxin, neuro-toxin, hepato-toxin, pneumo-toxin, etc. Impairment in the function of the ductless glands—adrenals, spleen, thyroid, and pituitary bodies, advance *paripassu* with the constitutional retrograde changes, so that from a physiologic viewpoint it may be said we have to contend with defective metabolism involving the entire system of the cellular activities. In other words, it obtunds or destroys cell function, and thus strikes at the fundamental basis of life itself—nutrition, excretion, motility, reproduction and response to stimuli.

The psychologic group of deviations, involving, as it does, the sexual apparatus as a pivot is, perhaps, the most important of all, since it relates to the function of reproduction, or man's second nature. Elie Reclus has well said, "Until man's hunger and thirst are allayed, he is but little better than a ravenous brute."* When we consider the inexpressibly delicate nature of the physiological mechanism relating to the function of reproduction, we must concede the possibility as well as the probability of injurious effects arising from causes which interfere with, impede or destroy the capacity of the nerve cells for the uninterrupted transmission of nerve impulses, motor and sensory — such as attend magnesium infiltration.

The incidental or symptomatic manifestations in neurasthenia may be grouped under a separate heading, but the treatment of these "symptoms," which is the limit in present-day practice, is like shooting up a blind alley at midnight—without excuse or reason.

The following schema will enable the reader to refresh his memory with reference to the various subdivisions as outlined, at the same time, furnishing a convenient means of identification and clinical classification.

DERIVIATIONS IN NEURASTHENIA—SCHEMA.

DOMINANT, (Primary):	Chemic	Motor and sensory centers Nerve trunks and branches Vaso motor nerves
CONSECUTIVE, (Secondary):	Anatomic	Cerebro-spinal nerves Splanchnic (Abdominal) Visceral (Brain, lungs, heart, liver, uterus, etc.). Toxemia (Intestinal, systemic)
	Physiologic	Ductless glands (Impairment) Metabolism (Defective).
	Psychologic (Sexual):	Amenorrhea and dysmenorrhea—in females Spermatorrhea and impotence—in males Melancholia, panphobia, paresis.
INCIDENTAL, (Symptomatic):		Lack of energy, easily fatigued Insomnia, impaired memory Constipation, dizziness abdominal distension Irritability, neuralgia, neuritis, "spinal irritation."

Coming now to the final analysis, and reasoning or advancing from the simple to the complex, from the particular to the general, we must consider the facts, both clinical and scientific, isolated as well as in series, the latter being essential to the development of ideas. Later, by grouping analogous facts, we are able to establish the basis of a law, although a comprehensive exposition of disorders of the nervous system requires that the subject be studied successively from the viewpoint of biology, anthropology (demography), anatomy, physiology, pathology, chemistry, and finally at the bedside—by exact observers and faithful recorders—to the end that "survivals"—intellectual fossils—shall be eradicated from our text-books. Paraphrasing a remark by Reclus, medical science should no longer be the "tilting-yard for fancies against opinions, for hypotheses against guesses. . . . . Science and virtue alike, begin and prosper by the same means—by sincerity and by effort." This "scheme of progression" is but another name for medical evolution, but following the dictum of Aristotle, we should make facts the basis of theory, drawing a distinct line of demarcation between them and mere conjectures.

Let us see, now, how this declaration dove-tails with our original proposition—to advance from the simple to the complex. Here is a child who twitches during sleep. There is no apparent cause, but we assume intestinal decomposition with auto-infection. The domestic remedy is castor oil. Medical treatment will be conducted on one of the two lines—the recent graduate invariably gives antiseptics, while an older man, long in the traditional rut, gives calomel followed by Epsom salts. In either instance, the patient becomes a "prospect" financially, *sickness is produced and recovery prevented.* Therefore, it will appear *simple* to claim that immediate and permanent relief can be secured by the judicious employment of the calcium salts in small doses — of course, the dietary may require attention—to recoup the lime depletion (of the nerve structures), thereby improving digestion and preventing intestinal decomposition, which gives rise to the reflex symptoms. Gritting the teeth, dreams, nightmare and "visions" are also well known reflex symptoms, although not confined to children. St. Vitus' dance is a more complicated condition, because the "nerve weakness" develops as a result of progressive chemical changes — probably from magnesium oxide — so that nerve conduction is interrupted. In epilepsy, the conditions are again varied, and still more complex, but the chemical deviation is still the dominant factor, this being confirmed by the results of treatment. Acute mania completes the series of "analogous facts" bearing upon "nerve weakness," all of which are traceable to nerve impoverishment as a result of chemical deviation in respect to calcium alone — the proof being found in the results attending judicious medication for the special purpose of promoting magnesium dissociation.

Take another series of analogous facts intended to throw further light upon this important subject. For example, a child recovering from a severe attack of cholera infantum will develop various manifestations of chemical deviation consecutive or secondary to the disease, anatomic, physiologic, psychologic.

(1) ANATOMIC.—Under the first heading, we have the usual disorders common to infancy and childhood, lack of bone-making material, failure in growth, bow-legs, defective or painful teething, flat-foot, hydrocephalus, and other evidences of malnutrition. In adolescents, these symptoms are emphasized, and when manhood is attained there is found a physical condition much below par. In the case of girls, there is spinal curvature and defective muscular development.

(2) PHYSIOLOGIC.—In infancy and childhood we have

*According to ethnographers, human development takes place substantially in the following order: (1) Material, (2) family, (3) social, (4) intellectual, (5) religious, (6) moral.

to contend with impaired digestion, mucous catarrh, adenoids, polypi, susceptibility to colds as well as to the prevailing seasonal disorders. In adolescents, the symptoms are emphasized, boys being effeminate, lacking in energy with dislike for either study or work, while the girls are neurotic, apathetic or precocious, many of them being unable to stand the strain incident to school work.

(3) PSYCHOLOGIC.—From the psychologic standpoint in infancy and early childhood we observe precocity, nervous irritability, mental deficiency, chorea and convulsions, in short, a continued series of irregular manifestations of imperfect nerve conduction. In adolescents, these manifestations are even more marked, so that these children attain to adult age in an extremely unfavorable condition to begin the battle of life.

It is a pertinent fact that many of these untoward sequelæ may be entirely avoided, and none of them will fail to respond, at least in a degree, to the measures previously outlined with reference to promoting magnesium dissociation, the only necessary factor in the case being careful observation as to the condition of the reactions, and it is believed that no better illustration can be advanced at the present time than that which is developed in the foregoing tabulation.

BRONCHIECTASIS.

BY JOHN B. HUBER, A.M., M.D.,
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THIS is a chronic, general or localized, fusiform or sacculated dilation of the bronchi; it is a lesion rather than a disease, since it does not arise *de novo* and accompanies or follows upon various diseases. It is perhaps more frequent in men than in women. Four forms may be differentiated:

1. Congenital; "bronchiectasis universalis." This is very rare, and has probably been related to ante-natal syphilis.

2. Bronchiolectasis in children: acute, attending or after infections; or chronic, with chronic bronchitis.

3. There is weakening of the bronchial walls by inflammation, the mucosa and the muscular and fibrous and even the cartilaginous bronchial tissue being involved. With the inflammation there are also as causative factors the weight of accumulated secretion and the expansive force and pressure exerted in coughing in such diseases as chronic bronchitis, influenza, emphysema, lobar pneumonia, broncho-pneumonia, interstitial pneumonia, and chronic tuberculosis; straining, an impacted foreign body, inhalation of dust, and traction of the thorax during inhalation may also be factors.

4. There is accumulation of secretion due to compression of a bronchus from without by an aneurism, a gumma or other tumor. Or there is gradual shrinking of pulmonary tissue in interstitial pneumonia, or by reason of pleuritic thickening; traction is thus exerted from without upon the bronchial walls. Thus many small, unilateral bronchiectases may be found.

PATHOLOGY.

In congenital cases the dilation is usually unilateral and general over the affected side. In other cases it is either general or partial, the latter involving only some of the bronchi. Partial dilations are found especially in chronic tuberculosis and chronic pleurisy.

The dilations are from half an inch to several inches in diameter; several may communicate each with the others by reason of ulceration and perforation of the walls. They are either fusiform or sacculated. The former are uniformly and evenly distended; the sacculated variety are spherical or oval, found mostly in the lower lobes, and they may become completely closed cavities. We may find such cysts immediately beneath the pleura. The bronchiectatic contents are thick grayish brown, purulent, muco-purulent fetid or gangrenous; pulmonary tissue and casts of minute bronchi may be found.

In bronchiectasis the mucous membrane is generally smooth, but it may be much eroded, especially in the dependent parts; cylindrical is replaced by pavement epithelium; the cavity may be lined by an indurated membrane; the walls are markedly atrophied, in some places thickened, and perhaps also very thin; many dilated vessels appear; the muscular and elastic fibres are stretched and separated; even cartilage may be atrophied. Ulcerated processes develop on the inner surface of a bronchiectasis and extend to the surrounding tissues, changing the whole region into a typical ulcerating lesion. Areas of cicatricial tissue, moreover, will be found studded with bronchiectases. Especially in bronchiolectasis may we have hemiplegia or cerebral metastasis or abscess by reason of embolus.

SYMPTOMS.

These are likely to be marked by the symptoms of the causal or concurrent disease—as phthisis or emphysema, etc. One thinks of chronic, fetid bronchitis, except that the symptoms of bronchiectasis are more severe and the cough is paroxysmal.

In extensive dilatations the cough and expectoration are distinctive. The cough is not continuous, but comes usually in paroxysmal attacks—on rising in the morning or after certain changes of position. At such times enormous amounts of sputum are brought up, a pint and even a litre in twenty-four hours; this is thin, sour and acid, or stale, sweetish, fetid, grayish-brown and purulent. The tubercle bacillus is usually absent. On standing for a while this sputum will separate into three layers: the top, frothy, brownish or yellow; the middle, clear and mucoserous; the lowest, brown or greenish-yellow, thick, purulent, containing pus, crystals of fatty acid and hematoidin, bacteria, pigment and tissue fibres (if ulceration). Temporary relief follows the expectoration of this sputum.

Hemorrhage is by no means rare; it occurs by reason of the dilated vessels and the ulcerative processes. There may be marked cyanosis and dyspnœa on exertion. Pulmonary osteoarthropathy may develop. Night sweats are frequent. Late in the affliction the pulse is rapid; there is little fever. There is anemia. Exacerbations are likely to be followed by marked improvement. The lesion is chronic; death is usually due to the disease causing or accompanying the bronchiectasis.

PHYSICAL SIGNS.

These will be very meagre with slight bronchiectasis. On inspection we note the anemic, cyanotic appearance in advanced cases; we may find the finger ends

clubbed and the nails incurved. The thorax may be retracted, when there is chronic interstitial pneumonia or an old pleuritic lesion. Vocal, bronchial and pleuritic fremitus may be marked. Where there is an empty cavity we may get tympanitic or cracked-pot resonance, the latter especially if the cavity is near the surface; harsh, bronchial, cavernous breathing, exaggerated voice and various rales—mostly dry. If the cavity is full, or if the dilated tube be surrounded by condensed lung tissue, we will have instead dulness with moist, gurgling rales.

DIAGNOSIS.

This is oftentimes difficult, especially in fusiform cases, unless the lesion is advanced; we suspect bronchiectasis from the conditions leading to it. We may differentiate from:

1. Chronic bronchitis by signs of a cavity, with irregular and profuse expectoration, influenced by position.

2. From a tuberculous cavity by the absence of the tubercle bacillus, the comparative absence of emaciation, night sweats and fever and of the regular tubercular symptoms and cachexia; the sputum is rarely nummular in bronchiestasis, frequent and slight hemorrhages through years in a well nourished patient would suggest a sacculated bronchus. A cavity in the middle and lower third of the lung, especially low down and posteriorly, suggests bronchiectasis, though this lesion may be found in the upper lobes. In phthisis signs of consolidation precede cavitation, whilst they follow cavitation in bronchiectasis.

3. From a sacculated empyema perforating a bronchus, by the history of the pleurisy and by the infrequent expectoration in the latter.

4. From actinomycosis (which is rare) by absence of the ray fungus from the sputum.

5. From cancer, by the primary carcinoma, the glandular enlargement and the cancerous cachexia.

6. Fetor may suggest gangrene; here (as also in abscess) the general symptoms must aid in the differentiation. The course of gangrene and abscess is much more acute than in gangrene.

PROPHYLAXIS.

Much can be done to prevent bronchiectasis. In chronic bronchitis (especially in the curable, who have less sensitive bronchi, less elastic thorax and lungs and weakened chest muscles) stimulant expectorants should be persisted in, the position changed often even the pelvis raised to promote expulsion of the sputum. Patients who have had delayed resolution in pneumonia should use breathing exercises (after all acute symptoms have subsided) and should lie on the sound side to prevent consolidation, and such interstitial changes as would tend to traction on bronchi. Pleural effusions should have early evacuations.

TREATMENT.

This is unsatisfactory. Cure is not expected. But the patient may attain even advanced age under good medication, and management of accompanying effections. Hygienic measures are essential; a right climate must be selected. Balsams are indicated. Creosote, benzoic acid, balsam of Peru, quinine, salve, terebene (M. V. — q. 4 hrs.), are prescribed. Stimulant expectorants are taken, as in chronic bronchitis. Hemorrhages are treated as in tuberculosis. There are inhalations of carbolic acid, or thymol, or Ⅱ ol. Eucalyptol, g xx, creosote, ʒj, alcohol, ether, chloroform, āā ʒv. Osler advises creosote vapor. The eyes are protected; the nostrils are stuffed with cotton; ʒj of creosote, placed in a saucer of water, is vaporized over a spirit lamp and inhaled. One begins this every other day for fifteen minutes; and progresses to an hour daily for three months. I have had excellent results by the intratrachial injection of menthol, 10 parts, guiaical 2 parts; olive oil 88 parts, a drachm should be injected twice a day.

In sacculations in the lower parts of the thorax, evacuation is most difficult; this is promoted by reclining in a modified Trendelenberg position. The patient is advised to recline thus an hour mornings and, if possible, also at night, changing from side to side until it is found which position favors the most copious expectorations. Compression of the regions involved may also promote this. "Coughing downward" is also accomplished by the patient, several times a day, lying on the bed, with one hand on the floor and the head almost reaching the floor. By thus not waiting for the cavity to fill, the patient experiences great relief and oftentimes finds improvement .

Surgery may be necessary, as a last recourse,—incision and cavity-drainage. Resection of ribs and mobilization of the chest wall may compress the lung tissue and thus close up gaping cavities.

THE FIELD OF NITROUS OXIDE-OXYGEN ANÆSTHESIA.*

BY GEORGE W. TONG, M.D.,
Assistant Anaesthetist to the Brooklyn Hospital.

The medical profession is generally conservative and puts its lasting trust only in those things which have been tried and proved valuable. Still there must be the explorers of hitherto unknown and untrodden territory; new methods and new drugs are being introduced daily, played with for a while, and the majority of them, unfortunately for the hopeful spirit in the profession or the credulousness of the public, thrown into the scrap heap after a little while and forgotten. But happily for medical progress something new, some improvement on the old, occasionally stands the test and is accepted by the conservative medical mind; the result is so much advance in medical knowledge. Pope's couplet

"Be not the first by whom the new is tried,
Nor yet the last to lay the old aside"

has its application as well in the matter of a new anæsthetic as in all other lines.

The nitrous oxid-oxygen combination is not so new as to need a defender; its merits are unquestioned as an anæsthetic, but in the minds of the majority its position and its field of usefulness are doubtful questions, and my intention is mainly to bring the subject up in such a way as to induce the consideration of the relative merits of this and other anæsthetics. We must be guided a great deal by what others have said on the subject; no one of us I believe has had a very large experience with the method, and from what little experience I have had, it is easy to see that good results or poor results depend more on expertness here than with any other method of inducing anæsthesia and that its use may be made more extensive in the hands of an expert than many suppose.

*Read before the Brooklyn Hospital Club, October 12th, 1910.

The proverb says: "Old friends are the best," and for that reason we always look, when we need an anæsthetic, with kindly feelings on the friend with which we have spent our infancy and childhood days, professionally speaking. The feeling is that we can always rely on ether to put a patient out in satisfactory fashion, and with any of the newer anæsthetics we are not sure of the results; therefore we will trust to the old friend and not add to the operative responsibility another concerning the anæsthetic.

This is the easiest way to look at the question from a personal standpoint; habitual use of ether (on other people) makes one forget at times that it is unpleasant to take and to recover from and that occasionally there is the unexpected death, an awkward and disconcerting occurrence for the surgeon. The scientific instinct to put things right often leads to some disregard of the humbler instruments in the work, which, in many cases, have as much to do with the ultimate result as the incision or the suturing. The wrong variety of needle handed to any one of our peppery surgeons is recognized as sufficient cause for an explosion of wrath; yet it does seem in a great many cases as if the question of the anæsthetic were more lightly considered, when the added shock of a poisonous anæsthetic may make all the difference between life and death in a case on the borderland.

And short of the case of necessity in which a less dangerous anaesthetic is required, there is the undoubted fact that a great many people object to ether for no better reason than that they don't like it. It may not seem a legitimate excuse for evading or postponing the operation that will restore them to health, yet there is an increasing number of people in this world who fear operation more from the standpoint of ether than of the knife, and conversely, we might add here, many operations in which the anaesthetic is more trouble, loss of time and danger than the operation. But it is certainly true that a person who has once had an introduction to ether to the anaesthetic degree never hankers to renew the acquaintance.

A case in point may illustrate this. A boy of about fifteen had had tuberculous abscesses in various parts of the body and had had them evacuated under ether anaesthesia in each case. After eight or nine experiences of this sort he refused to have an operation on his wrist because of the anaesthetic. Like many other people untrained in the course of disease, the question of what would happen to him if he allowed the abscess to remain did not trouble him. Ten minutes of gas-oxygen sufficed to clear out the cavity, incidentally giving a perfect surgical anaesthesia, and the patient has no more dread of any operation which may come in the future. A minor consideration, you may say, this one of comfort to the patient, but it may come to any one of us some day to be in the same relative position and then we will be thankful for a little consideration as a living, suffering human being, outside of the professional interest we may arouse as a case.

In dealing with children especially this question of pleasant administration is important. I have seen more than one child whose post operative association of the doctor with the struggles that occurred in the first stages of anaesthesia have made that man's later relations with the child a continual trouble to himself and the parents.

What is more important in this connection is that from the anaesthetic standpoint, children and those in general of not too strongly developed physique are the most suitable cases for the nitrous oxid-oxygen combination. It can be given to them with an assurance that the anaesthesia will be perfectly satisfactory from the surgeon's standpoint of being able to do his own work without interruption or delay.

The other class of cases in which a safe anaesthetic is the consideration rather than a pleasant one, in which there is less feeling for the personal wishes of the patient, may be exemplified by cases of shock and hemorrhage. The increase of blood pressure (usually about fifteen to twenty points) and slowing of the pulse, the absence of shock from anaesthetic poisoning added to the original injury, and the rapid recovery from anaesthesia, make it peculiarly useful; and on the other side of the picture we might add that the depressed condition of all the vital forces makes the anaesthetic exert a more profound effect than it would ordinarily have, and gives in addition to the anaesthesia itself the muscular relaxation necessary in some conditions.

A woman, following an early incomplete abortion, had been flowing profusely for six weeks, and her physician decided to curette her. The mucous membranes were colorless and he hesitated about giving her ether. A hemoglobin estimate on the day of operation showed 30%, and the question of anaesthesia was decided in the negative. Dilatation of the cervix without any anaesthesia proved too painful, so we started the gas-oxygen combination. In two minutes she was anaesthetized enough to complete the dilation, and ten minutes more sufficed to remove the adherent placenta which was the cause of the bleeding. One minute after the removal of the mask she was conscious again, but not conscious of having suffered at all. This to me has been one of the most striking proofs of the positive value of the combination. A dangerous condition, impossible to correct properly without an anaesthetic, yet rendered doubly dangerous by the use of ether or chloroform (for a hemoglobin below 50% must be treated with proper respect) was cured quickly, pleasantly and safely.

If this combination is the universal panacea that I would represent it to be, you may ask why it has not come into more general use. The medical profession is usually conservative but a really good thing does not generally lack for sponsors. Still some experience with it is necessary and somewhat more advertising. In some sections of the country its use is a great deal more general and we do not necessarily need to attribute this to lack of enterprise among the medical men of the East. There are a few reasons which in my own mind have served to prevent its becoming the anaesthetic of choice. The first, from the standpoint of the anaesthetist, is the expense of getting started which only permits a few to have the necessary apparatus. Every one fits himself out with some inhaler or other for ether and chloroform on his entrance into the struggle for a medical existence and rightly expects to earn much more from it than the initial cost. With a special gas inhaler the cost is so much more and the return is likely to be proportionately less, and I might add that there are no enterprising salesmen in the field to tell us what a money maker it would be and propel the hesitating purchaser over the brink of uncertainty.

Rather more important than this is the fact that experience with the apparatus and the anaesthetic is necessary; in fact, most of the unsatisfactory results of gas may be more justly laid at the door of inexperience. You might say that anaesthesia is the same no matter by what means you get it, but the important point is to know just how to arrive at the desired end. After the usual experience of a hospital interne, leaning over an ether inhaler day after day, perchance dozing between dashes of ether and being roused to action by some movement of the patient or a scathing look from the surgeon, each one very rightly feels competent to administer ordinary anaesthetics. But I doubt greatly whether the training of hospital internes in gas administration without the previous experience with other anaesthetics will prove very successful, and with an agent whose action is as fleeting as gas, a perfect anaesthesia means steady, faithful attention every second, plus the knowledge of what is required in anaesthesia. When giving nitrous oxid I have never felt that a screen across the table was necessary to keep my curious eyes from wandering lower to the scene of operation.

The cost is not an item of much account, though it is sometimes mentioned. It is hard to estimate the cost of any anaesthetic except in a large number of cases. There is no doubt gas exceeds ether in expense, but the ratio is not so great as that between ether and chloroform, and in the latter case the greater danger of chloroform is enough to outweigh the financial question. The same argument applies to nitrous oxid. Estimates vary from 1½ to 2 cents a minute, but when you consider that a fifteen minute operation can be performed in about seventeen minutes of anaesthesia, where with a lower acting agent it would use up at least half an hour, the cost is not prohibitive.

The most reasonable objection is that gas anaesthesia is not satisfactory, and we must admit that this is true in some cases. The ethereal surgeon (if I may use that term for him who is wedded to the old tried friend) is accustomed to see his patients stretched out limp to remain in that condition for a considerable time, and any reflex or involuntary motion disconcerts him. In many cases this complete muscular relaxation is a necessity, but I do not believe it an exaggeration to say that at least 50% of the surgical cases operated on require only anaesthesia in its true meaning and would be as satisfactory to the surgeon, and, without doubt to the patient, without the profound narcosis of ether. Recall to your mind your own operative cases and you can see that many surgical conditions, rather trifling in themselves, are enlarged to major operations by the anaesthetic given.

All that is required is a change in the mental attitude of the surgeon, the realization that his patient is just as unconscious of pain even though some unusual manipulation calls forth a deep groan or a twitch of arm or leg. It is not to be expected that an agent which can render a person unconscious in a minute and from which he can emerge in another minute after any length of time without unpleasant sequels will penetrate as deeply to the vital centers as the more poisonous drugs, yet in the proper cases perfect muscular relaxation as well as anaesthesia may be had. An anaesthetic of 25 minutes duration, given about two months ago, gave complete relaxation and permitted the dissection and removal of a lipoma about six inches broad from beneath the fascia lata.

All this previous discussion brings us rather indirectly perhaps to the main point at issue,—which are the cases that may be trusted to nitrous oxid-oxygen anaesthesia with a fair hope of success. We should prefer to know in advance which was the proper method to use, for it is a little disconcerting for the majority of us to be obliged to change from one anaesthetic to another in the middle of an operation when the first choice is not satisfactory.

Yet a surgeon does not feel that a patient has treated him unfairly, taken advantage of his inability to know everything in advance if in operating for a supposedly free appendix he encounters an abscess, and is obliged to change his plan of operation to suit the condition. In the same way, with a properly equipped apparatus the change to ether may be made with no more trouble than in using the gas-ether sequence so common now at the beginning of anaesthesia. I have had to shift in this manner on two or three occasions and have never delayed the operation more than three minutes.

If any one is awaiting an answer, classified as to desirable and undesirable cases, I must disappoint him, for I should not be able to do it, even if there were time to read out lists of diseases, either from my own or other's experiences. It is the patient rather than the condition that must be considered and my very first anaesthetic with the new inhaler proved to me that it is not always wise to judge beforehand.

A colored man was brought to the operating room and handed over to me for trial, as you might say. He was fat, about two hundred pounds, deep chested, his neck broader than his cranium, a type that I have always considered not a very favorable one for a smooth ether anaethesia. On the broad plateau beneath his skull an extensive carbuncle had burrowed its way and spread in spite of treatment. Although not very hopeful, I started the anaesthetic and in three minutes was much surprised to see the surgeon start the incision without the least objection from the patient. The back of his neck was almost completely removed under the perfect anaesthesia, and five minutes after the removal of the mask he walked down stairs.

As a result of this and other similar experiences I have not been able to make any rules, indefinite even, as a guide to the proper cases. Anaesthetists in other parts of the country wth experience figured in thousands of cases have used it with success in the most difficult laparotomies in the list of surgery. The committee on anaesthesia of the American Medical Association recommends it as the anaesthetic of choice and lays most stress on the fact that experience in administration is the largest element in success.

It is impossible for me to make out any list of conditions where it would serve and others where it is contra-indicated. All we can say is that in any case requiring operative care, especially where the pleasantness and ease of administration, economy of time and, most important, safety of the patient are of more than ordinary importance, give the nitrous oxid-oxygen combination the preference.

429 Third St., Brooklyn, N. Y.

A Safe for Radium, with a three inch lining of lead, has been specially constructed for the British Medical Corporation; experiments made by experts have proved that lead is practically the only metal which will resist the radium emanations.

GENITO-URINARY DONT'S.

BY MAX HÜHNER, M.D., NEW YORK.
Chief, Genito-Urinary Department, Harlem Hospital Dispensary.

DON'T pronounce any venereal sore, that has been under treatment and feels hard, a hard chancre; as the most innocent sore can be made to feel hard and indurated by caustic and other applications.

2. Don't diagnose a venereal sore on the penis as non-syphilitic because it came on only a *few* days after coitus. It may be the result of a coitus three or four weeks previous to the last one. Examine for spirochitæ pallida.

3. Don't pronounce a venereal sore, non-syphilitic because it is suppurating, as a syphilitic sore may become secondarily infected.

4. Don't pronounce venereal sores, chancroids or non-syphilitic simply because they are *multiple*. A hard chancre may be in the midst of several soft chancres, also more than one hard chancre may come on at one time.

5. Don't forget that destruction with the paquelin cautery is the quickest way of healing chancroids.

6. Don't give mercury, no matter how sure you are of the character of a venereal sore. Wait for secondaries.

7. Don't consider every lesion on the genitals as venereal. Remember that many skin diseases may appear on the penis.

8. Don't perform circumcision in the presence of chancroids, as infection of the circumcision wound is apt to follow.

9. Don't consider your patient sterile because he has a thickening of both epididymi as a result of an old epididymitis. Let him have coitus ad condom and examine the semen for spermatozoa.

10. Don't consider your patient not sterile because he can normally perform the sexual act and has normal sexual desire. Remember that a person may have sexual organs which feel and look normal, may be able to normally perform the sexual act, including ejaculation of fluid which has all the naked eye appearances of normal semen, and yet this fluid under the microscope will never show any spermatozoa showing that he is absolutely sterile.

11. Don't recommend any operation upon the female genitals for sterility until you are satisfied that the husband is all right.

12. Don't recommend the operation of anastomosis between the vas and epididymis for sterility until you are satisfied by aspiration of the testicle that it contains spermatozoa.

13. Don't necessarily consider the wife the cause of the sterility because live active spermatozoa are found in the semen brought in the condom. The husband may be suffering from hypospadias, or epispadias, or stricture of the urethra, in which case the fluid which is found in the condom may be all right, but not one drop is able to reach the cervix. The best test is to examine the female cervix for spermatozoa shortly after coitus.

14. Don't fail to impress your syphilitic patient with absolute necessity of keeping the mouth and teeth in the best possible condition while under mercurial treatment. Mercury can be taken for a long time without producing salivation or other poisonous symptoms if the mouth and teeth are kept clean.

15. Don't fail to impress your syphilitic patient with the absolute necessity of cleanliness of the skin (daily baths) while taking iodide of potassium, as this drug can be taken for a long time without producing a skin eruption, if the skin is kept in good condition.

16. Don't give your syphilitic patient iodide of potassium in 100% solution if you expect accurate dosage. It is very difficult to make up a 100% solution, and most druggists will not take the trouble and will give you a weaker solution. Avoid trouble by prescribing a 50% solution and regulate the dose accordingly.

17. Don't fail to impress your syphilitic patient at the *commencement* of treatment that all symptoms may rapidly disappear within a few weeks, but that it is absolutely necessary to continue treatment for several years even if no symptom presents itself.

18. Don't inject mercury into your syphilitic patient until certain your needle has not entered a vein. After inserting the needle, remove the syringe and see if any blood comes; if it does, remove the needle and insert somewhere else before injecting.

19. Don't give a mercurial injection at the same place or on the same side twice in succession.

20. Don't tell a patient suffering from venereal disease, to abstain from coitus *while under treatment*,—this would imply that he may have coitus when well, and so run the chances of further infections. Tell him coitus is not necessary for the preservation of sexual function.

21. Don't fail to think of and examine for Locomotor Ataxia in every adult with urinary symptoms even in the presence of an enlarged prostate.

22. Don't forget to allow some urine to remain in the bladder when catheterizing a distended bladder. If all is removed at once you may start an alarming hemorrhage.

23. Don't forget that gentleness and slowness is most important in overcoming the resistance of the cut-off muscle, when passing a sound or catheter.

24. Don't forget that asepsis is just as important in genito-urinary work as in any other branch of surgery.

25. Don't allow any patient, even though he be a physician, to pass any instrument into his own urethra, as infection is very apt to follow.

26. Don't forget to think of tuberculosis in every non-gonorrhœal, non-traumatic, inflammation of the epididymis in a young person, especially if the head of the epididymis is involved.

27. Don't fail to think of tubercular orchitis in every hydrocele that repeatedly reappears in spite of tappings and astringent injections.

28. Don't use absorbent cotton against the meatus in gonorrhœa to catch the discharge. It only dams it back. If the patient has a prepuce, take a square piece of gauze (several thicknesses), put a slit into it, pass the penis through the slit as far as the corona, then draw the prepuce over the piece of gauze. If the patient has not a prepuce, make a bag shaped like a condom, put absorbent cotton at the bottom of it, and fasten the bag to shirt or belt; let penis hang in this bag so that pus may freely drop into the cotton at the bottom of the bag without lying against it.

29. Don't fail to instruct your patient about the

danger of getting gonorrhœal pus into the eye.

30. Don't pronounce a gonorrhœic cured or improved, because no pus is seen at the meatus; let him refrain from urinating for twelve hours and look again.

31. Don't consider a discharge at the meatus *non*-gonorrhœal because no gonococci are found therein. The patient might have used an injection of some silver salt the day before his visit, in which case no gonococci would be found in the pus.

32. Don't fail to instruct your patient to urinate first before using any injection into his urethra.

33. Don't use the endoscope or other diagnostic instrument in the urethra in acute gonorrhœa or in an acute exacerbation of a chronic gonorrhœa.

34. Don't think your patient has *no* posterior urethritis because he has no frequency of urination, vesical tenesmus or other clinical symptoms of it. Remember that posterior urethritis may exist without any symptoms whatsoever. Make the modified Kollmann test from time to time.

35. Don't think you have set up a posterior urethritis because frequent and urgent urination comes on after the patient's *first* intravesical irrigation. This sometimes occurs for a few days after the commencement of intravesical irrigation treatment and disappears without treatment.

36. Don't express any opinion about the condition of the prostate or seminal vesicles, if examined per rectum with the bladder *empty*. Either distend the bladder artificially, or have patient retain his urine next time, and you will often find a different condition of these parts at this examination.

37. Don't use *warm* or *hot* solution for washing out the anterior urethra in making the Kollmann or any other test for the presence of pus in the posterior urethra. Warm or hot solutions are apt to cause a relaxation of the cut-off muscle, in which case you would wash out the posterior urethra also, and your test would be worthless, except if positive.

38. Don't think you have set up a posterior urethritis because urgent and frequent urination comes on after a rather strong injection of silver nitrate intravesically. This is due to the silver nitrate and rapidly disappears without treatment.

39. Don't give a deep urethral injection or any other injection, in the presence of an acute posterior urethritis. Leave the deep urethra strictly alone. Give alkaline diuretics, opium and belladonna suppositories (one grain of the aqueous extract of opium and one-third grain of the extract of belladonna) and rest in bed if possible.

40. Don't massage an acutely inflamed prostate. Rest in bed, ice water rectal injections, and opium and belladonna suppositories will cure most cases.

41. Don't give any urethral injections whatsoever, or massage the prostate in the presence of an acute gonorrhœal epididymitis. Rest in bed, ice bags, and touching the skin over the inflamed organ with the paquelin cautery will quickly relieve the pain and start resolution.

42. Don't think your patient has no stricture because a large sound will pass into the bladder. Examine with the bougie à boule and you will often find one or more strictures, when *removing* this instrument even though the urethra will admit a large sound.

43. Don't forget that the paquelin cautery is the quickest way to relieve the pain of an acute gonorrhœal epididymitis.

44. Don't commit yourself as to the time it takes to cure a gonorrhœal vulvo-vaginitis in an infant or young child. It may take months or even years.

45. Don't consider a woman, who has had gonorrhœa, free from contagion because no gonococci are found even by culture anywhere in the genital canal. A woman may not have any gonococci on the surface, but have any amount of them hid away in the glands and the ducts about the genitals, and during coitus may pour them out and infect her partner.

46. Don't fail to impress upon your patient that there is no such thing as a sure or safe person to have connection with. Thousands of cases of gonorrhœa are contracted from these so-called *sure things*.

47. Don't fail to impress your patient with the danger to wife and offspring of getting married before completely cured of venereal disease.

48. Don't forget that a discharge in chronic gonorrhœa may be due to overtreatment. Stop for a time and watch the result.

49. Don't try one injection after another in chronic gonorrhœa. If the discharge has a tendency to persist, examine the prostate and seminal vesicles, examine the urethra for strictures, infiltrations, etc.; in short, make a *diagnosis* of the conditions present and treat accordingly, but don't treat blindly by trying one injection after another.

50. Don't tell your patient that it is dangerous to stop the gonorrhœal discharge quickly, for it isn't. The sooner the pus is out of the urethra, the better for the patient.

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SOME NEWLY DISCOVERED PARASITES FOUND IN URINE AND THE URINARY ORGANS.

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FRESHLY voided normal urine does not contain any micro-organisms, parasites, subsequently they may rapidly develop, but this does not constitute a regular system of parasitologia, as we can call the conditions found in the intestines. W. Roberts (See British Med. Journal, 1881) was the first who described the parasitological conditions of the urine organs "en general."

Among the last and newest discovered parasites in the urine we find the bacillus lactis ærogenes, which occurs in the intestines; occasionally finds its way into the urine and may be the cause of cystitis or of urethritis. As the result of catheterisation, with subsequent cystitis, Horton-Smith (Journal de Path. et Bact., Paris, 1897) found in the urine the bacillus proteus urinæ, which differs from other members of the proteus group. In female children affected with thrush, the spores and threads of oidium albicans may occur in the urine if the disease has attacked the vulva.

Cryptobia helicis is a microscopic entozoon inhabiting the genito-urinary organs. Is colorless, form ordinarily elongate, ellipsoid, fusiform, or ovate. This entozoon in its general appearance appears to be intermediate between cercaria seminis and the filaria. Its varied form and movements are curious to observe; at one moment globular, then oval, ovate, fusiform, sigmoid,

crescentic, etc., etc., it appears as if it would outvie the kaleidoscope in its changes. The motions are vibratile, rotary, with a lateral progression, or whirling in circles like the insect gyrinus. Cryptobia helicis might be confounded with the spermatozoa of the animal in which they are parasitic, on account of the organ in which they are found being connected with the generative apparatus, and its supposed use as a spermatheca, but they may be readily distinguished; the spermatozoa of Helices generally having either a uniform sigmoid or a beaded body, with an enormous proportionate length of tail, and a slow, vibratile motion. It may be well to mention, that C. Helicis does not exist in the collapsed state of the generative organs. In the urinary bladder was found the distomum cygnoides. (See Dujardin Hist. Nat. des Melm., page 396, Paris). Body yellowish white, posterior to ventral acetabulum sublinear, or compressed fusiform, subacute; neck cylindrical, translucent. Ventral acetabulum two to three times larger than the oral, cup-shaped. A very near relative is the distomum retusum, with which it can be confused. Its body is whitish, with yellowish brown from the ova; oblong, sublinear, oral acetabulum larger than the ventral. Posterior sinus very large. At the same time, when the pretty polyzoan urnatella gracilis was discovered, was a fitting associate, the manayunkia, also discovered. It is closely related with the marine annelide fabricia. Manayunkia has proved to be less frequent than urnatella. It forms a tube of mud, which it occupies. The tube is composed of the finest particles, agglutinated by a mucoid secretion of the worm. It is cylindrical, straight or bent, mostly even or slightly uneven on the outside and sometimes feebly annulated. It is attached partly along its length to fixed objects, with the greater part free, directed downward and pendent. Most specimens observed were single, but several found in which two or three tubes were conjoined and in one instance five tubes, with remains of others, were given off in a candelabra-like manner from a common stem. The mature worm is from three to four millimeters in length by about one-fourth of a millimeter in breadth, and is divided into twelve segments, including the head. The color is translucent, olive green, with the cephalic tentacles of a slightly brownish hue. The head is about as broad as it is long, and is surmounted by a pair of lateral lophophores supporting the tentacles. When the worm protrudes from its tube, the lophophores are reflected from the head, and they exhibit a double row of tentacles extending forward.

It was reported some time ago, that dendrocœlium superbum was found in the urinary bladder of some animals. (See Nordamerkanische Monatsberichte der Nat. Hist. Ges., Band II, Seite 2.) It is translucent, white, the anterior part of the body truncated, the posterior part angular. Œsophagus long, intestines delicately and minutely ramified, brown or blackish-brown in color. Stein says in the "Archiven für Klinische Medizin" that, if sarcinæ are found in urine, it is usually of alkaline reaction. The urinary deposit is mostly of earthy phosphates. I remember one case, in the Clinic of Hofrath Professor Dr. H. Nothnagel, of Vienna, the urinary sarcinæ were much smaller than the gastric sarcinæ in the same patient. The urine being an unfavorable medium for their cultivation, the sarcinæ are imperfectly formed.

489 Pelham Avenue.

Bovine and Human Tuberculosis. — Again and again arises the importance of knowing how far and in what the danger lies of acquiring a tuberculosis infection from milk. The importance of this is supreme, because we utilize milk so generally for an article of food. Bovine tuberculosis, therefore, must be studied and its relation to human illness uncovered. Koch, in 1901, at London, says Calmette (L'écho Médical du Nord, October 30, 1910) gave out his opinion that Smith was right in asserting the non-identity of tuberculosis of the human and the bovine types. Koch always maintained this view. Other students, notably Americans, have shown the frequency of incidence of human cases due to infection by bovine elements. If Koch is right in asserting the non-identity of these two types, at least the interchange is true, and series of cases can be given in support of this statement. Moreover, we know that a bacillus of bovine type frequently assumes the human type when cultivated by (a) passing through the cat, (b) or in the presence of lecithin (c) or upon solid human serum, (d) or in mineral liquids to which succinimide or asparagine has been added. Also, a bacillus of human type soon becomes bovine in type if cultivated for several generations through a sheep or a rabbit. Experimenters, chiefly Nocard, Arloing, Ravenel, Schroeder, Cotton, Rabinowitsch, Damman, Mussemeier, Schuetz, Eber, Behring, Roemer, Fibiger, Jensen, and Nathan Raw, attest the virulence of bacilli of bovine type for all turberculizable animals, man included. However bacilli freshly derived from human lung are more virulent for man than those issuing from bodies infected by bovine types. Among children we recover directly, from infected glands, germs of a bovine type. But we always recover from long-standing cases of pulmonary phthisis germs of a human type, with Arloing's one exception. This fact means much to Koch, but Calmette ventures to hold that it may be inexact to draw such a conclusion as that these pulmonary infections presuppose communication of the disease from one human to another. We may admit that the experience of laboratory workers is such as to show extra-corporal transition of type; within the lung we may have had some such transition, before the later stage of phthisis is reached. Calmette, further expresses agreement with Chauveau and Behring, who say that an intestinal or degustative source is more common in tuberculosis than one of inhalation. Certainly, an intestinal origin of tuberculosis, while admitting milk infection, strengthens itself by allowing for infection through disseminated sputum. It has been shown beyond any shadow of doubt, says Calmette, that the bacillus of Koch may, and does, traverse the intestinal mucosa, entering the substance of peritoneal glands, yet leaving no trace to mark its desolating path. Not until the fated parenchyma is attained. Whereupon the germ begins its multiplication. Calmette continues by asserting that in Normandy, Brittany, Auvergne, Flanders, and often elsewhere in France, upwards of 45% of cows are tuberculous, to judge by experimental reactions to sera (vaccines, more exactly). It is true that tuberculous cows do not constantly emit bacilli in their milk. Recently, Eber, of Leipzig, has taken 206 samples of milk, of which 10½% were tuberculous. Mortality from tuberculosis in France, Calmette assures us is upwards of 25%.

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THE RESPONSIBILITY OF ADVANCED MEDICAL INSTITUTIONS TO THE PROFESSION.

IN a previous article, it has been pointed out that medicine is scarcely abreast with many mechanic industries, in degree of perfection of its instruments and armamentarium nor in the accessibility of information which may enable the individual practitioner to achieve the best results. Largely on account of poverty, partly on account of lack of time, so far as those in active practice are concerned, or of lack of practical experience with the actual needs of the profession, in the case of laboratory workers, certain kinds of teachers, etc., it seems impossible to expect the rapidity of advance theoretically possible, without centralized effort both to render easily accessible, a knowledge of what has already been accomplished, and to support the experimentation necessary to the perfection of details.

We venture to express the opinion that, entirely aside from altruistic ethical ideals and an application to the profession of the democratic theories of American government, the advance of medical science and art depends to a degree, scarcely realized, upon a practical development of professional solidarity. By this statement, we mean that the whole profession must be considered as a unit, not only in the sense that the welfare of the average practitioner must be consulted in every undertaking, but that his co-operation must be counted as an indispensable factor in scientific as well as practical advancement.

There is an unfortunate tendency among what may be termed the elite of the profession to speak slightingly of the rank and file of the profession and to apply to it a principle of great business leaders—"The public be damned." This principle is not so highly esteemed in either the commercial or the political world as formerly and we believe, that quite aside from sentimental reasons, it would be a serious mistake to allow it to be applied in medicine.

It needs no argument to establish the fact that, so far as practical, humanitarian problems of improved diagnosis and treatment are concerned, the rank and file of the profession must share in the advance of their leaders. So far as the public health and life are concerned, it makes little difference how far our art is perfected in the hands of a few leaders, unless the great mass of the profession are brought to approximately the same standard. It is in this respect, of the actual routine use of medical knowledge that the European profession has surpassed the American though the discrepancy is, fortunately, disappearing rapidly.

But we wish to be clearly understood as contending that medical science itself can not advance at a satisfactory rate, except with the utilization of the forces of the average practitioner. The time is not so far in the past when research work was largely conducted either personally, or by direction of the work of assistants, by men in actual practice. This method sufficed for the pioneer stage of exploration but an accurate, minute survey of individual problems, as in bacteriology, the elaboration of immunizing agents, the close study of physiology and pathology, and the accurate study of therapeutic agents, requires not only refinement of technic and special information, but opportunities for uninterrupted labor incompatible with the demands of practice.

Unfortunately, while the solution of difficult problems must, so far as can be foreseen, remain in the hands of non-practicing adjuncts of the medical profession, the presentation of the problems for solution, at least in so far as their relation to humanitarian problems is concerned, the judgment as to their emergency, of the time at which they must be studied, their relative importance, their interrelations and, finally, the checking of theoretic solutions with practical results, must rest with practicing physicians and surgeons.

How often does it happen that the conscientious practitioner, confronted with a case of considerable rarity, or with a juxta-position of cases which seems to indicate a causal relationship, either in the sense of an infectious factor, or of a common origin of lesions of different type or localization, or with some other problem in which it is necessary to strike while the iron is hot, finds it impossible to secure the cooperation of specialized scientific skill. The laboratory man is not interested, or cannot imagine that the particular physician can have an idea of any value, or he wants to take his vacation, or even feels himself bound to refuse assistance except to the few men with whom he is directly affiliated.

While it is always unwise to criticize scientific study as too diffuse and unpractical or to insist on a limitation to directly utilitarian ends, or to manifest impatience at

the slow progress toward practical application, it cannot be denied that the majority of research laboratories, whether supported by public taxation, or directly endowed by private philanthropy, or indirectly supported in connection with medical educational institutions, are ultimately paid for so as to secure practical knowledge of the nature, detection and relief of disease. Common honesty demands that these ends should be kept constantly in mind. And it may not be out of place to point out, even from the low standpoint of expediency, that the popular sentiment to which such institutions owe their support, is largely a reflexion of general medical sentiment. If the sympathy of the medical profession, as a whole, is alienated, it is doubtful if such institutions will be long maintained. And, while it is obviously impossible to place the facilities of research laboratories at the disposal of every physician, or to allow interference with their routine by the personal hobbies of the individual practitioner, it must not be forgotten that, unless they are properly representative of the profession and controlled in accordance with the scientific and ethical interests of the profession, their ultimate purpose will fail.

To a very large degree, scientific advance in medicine depends upon clinical and pathologic material. In regard to the elucidation of comparatively rare diseases, the co-operation of the profession generally, is clearly necessary. But it must not be forgotten that, even for common diseases, crucial points often depend upon rare coincidences. Among such, may be mentioned the occurrence of clinical conditions closely limiting the period of incubation, the joint occurrence of different infections, the securing of pathologic specimens from diseases of small mortality, the occasional development of an exaggeration either of the prime factor—as for instance, a calculus, a secretory disturbance, etc.—or of some associated process. Often, too, it is of the utmost importance to have records of the progress of disease through a long period of years. Indeed, we are inclined to believe that, for the solution of a general problem and for the recognition of interrelations of the highest value in medical science, clinical experience is absolutely essential, although for the elaboration of details and the establishment of scientific principles, we must look to the laboratory worker.

Shunned Doctors.—One Mrs. M. V. Seale recently died at eighty in New York City. She had been a spiritualist and had refused medical treatment throughout the three months' illness terminating in her death. During this time she had been visited in her dreams by famous men, among them Henry Ward Beecher, all of whom advised her against medical practice. There must have been something incorrect in all this: for the great divine was strong for doctors and the use of drugs.

PUBLIC SPEAKING.

THE Japanese are in many respects a wise folk, having customs worthy of imitation; and in no respect is this truer than as to their prandial oratory. This is done, not after the feast, but before it —upon the theory, it seems, that the meat and drink should come as a reward for producing (and enduring) the oratory. Our custom of post-prandial speaking is, perhaps, by reason that the things to eat, and especially to drink, are to fortify the mind and body for the production (and the endurance, let us not fail to add) of the oratory. occidental custom has some distinct disadvantages, as when the dozen odd courses have been found so delicious, and the wines so correspondingly excellent that all sense of the proportions and the fitness of things, all philosophis notions of time and space (but more particularly the former) are lost, to the manifest agony of the speaker and the sympathetic torture of his colleagues of his colleagues. Yet here is a situation when most men, if they are to get through the ordeal with credit to themselves and with gratification to their hearers, need above all things else the clear brain and the steady gastronemius. It has been well observed that no man, shipwrecked on a desert isle, without so much as a cannibal for company, is so utterly alone in the world as the after-dinner speaker during the first few moments that he gets on his feet. And here we may, without appearing to make any insidious comparison, pertinently quote Thomas Carlyle: "The speaker is as the ass whom you took and cast headlong into the water. The water at first threatens to swallow him, but he finds to his astonishment that he can swim therein, that it is buoyant and bears him along. One sole condition is indispensable— audacity, vulgarly called impudence. Our donkey must commit himself to his watery element, in free daring strike forth his four limbs from him. Then shall he not drown and sink, but shoot gloriously forth and swim, to the admiration of the bystanders. The ass, safe landed on the other bank, shakes his rough hide, wonderstruck himself at the faculty that lay in him, and waves joyfully his long ears! So, too, the speaker!"

In point of fact, he who can speak coherently and logically in a drawing room, has the inherent ability to address any assembly. One should go prepared for an after-dinner speech, not with words and sentences previously got by heart, but with the skeleton or framework of his speech clearly outlined in the mind, so that he may fill in with material supplied by the occasion and with ideas called forth by previous speakers. Two things should be in the speech: a good anecdote, to begin with; and a clearly conceived sentiment with which to end the speech. One had best have several stories in stock, in case any among his own have been appropriated by a previous orator.

The physician may be called upon to address a lay audience in a hall or a church. Here again it may be said that he who can make himself clear in a drawing-room is able to speak in public. As in all oratory, the colloquial or conversational style is on the whole the best—and for the inexperienced the safest. One may read his discourse; but reading is never so eective as speaking straightforwardly. This is not so difficult if we will beforehand write a logical and careful outline of his subject, to be referred to as he proceeds. An eminent and experienced public speaker advises that the

best thing to eat just before addressing an audience is a bit of half-done beafsteak and plain bread without butter; and, if it is desired, one cup of good English breakfast tea. Tobacco and alcohol are to be eschewed. "The occasional stimulant becomes a constant crutch; the speaker's depression that naturally follows his exaltation is only deepened and darkened by the use of narcotics and stimulants." Sip but do not drink water if desired during the speech.

Sleep immediately before speaking is by far the best preparation for this task. A catnap of ten minutes will be found wonderfully refreshing and clarifying to ideation; "but if you can get an hour or two of slumber on your bed in your night gown, you will rise for your lecture with your strength renewed like that of a strong man to run a race—or make a speech."

ASTHMA.

THERE is probably no human affection of which the causes are more numerous or protean than asthma. Many of these causes act on the mucous membrane of the upper air passages; others act indirectly through the blood and the nervous system. Some unfortunate people have asthma only when they are exposed to a direct cause; whilst others have constantly recurrent attacks without any apparent cause. And it is the latter which require study in each individual case, because immense relief can be afforded and even cure achieved when the underlying causative factor is discovered and perhaps eradicated. Among direct causes most easily ascertained are defects in the nose and throat —polypi, exostoses, deflections of the septum, hypertrophic rhinitis, adenoids, enlarged tonsils or other untoward conditions. From the nostrils down to the bifurcation of the bronchi one way, by careful examination, find a cause, the removal of which would end the distressing and sometimes dreadful paroxysms of this disease.

Then there is dust of all kinds. Common street dust should never be examined under the microscope just after a meal; the process is liable to induce qualms. One sees in the field molds, fungi, bacteria and many other most offensive and imitating particles, both inorganic and organic; fluff from woollen clothing, the dust of mills, of foundries, threshing-floors, bake-shops; and such material as is evolved in offensive trades—which, when inspired by the susceptible, will induce asthmatic seizures. Here is a report of one specimen of city dust: "Plaster, iron-rust, stone-dust, cement from building operations, dust from excavations or from badly-constructed tents, ashes, house-sweepings, dried garbage blown from barrels and cans, chimney-soot and cinder from industrial plants, excrement of horses, dogs and other animals, dried sputum of the tuberculous, and of those having bronchitis, naso-pharyngeal catarrh and pneumonia in its first stages."

Many odors will produce paroxysms in the asthmatic —odors of pitch, phosphorus and sulphur, of chemical vapors; the emanations of dogs, cats, horses, hares; the smells of such plants as ipecac, and of flowers, as perhaps the rose; grasses and the pollen of plants induce asthma, having much the same causation and onset as ordinary asthma, which is a disease of the bronchial tubes; the difference is only in the site of the affection, which in hay fever is the nasal cavity.

Climate plays a great part in the development of asthma; and here the matter is almost wholly one of idiosyncrasy in the individual. Extremes of temperature, or excessive dryness, or, on the other hand, excessive moisture, may induce the seizure. Thunder storms will in some bring on attacks. But as to climate we can fairly well differentiate two classes of patients; those who suffer from dampness, combined with either heat or cold; and those who are especially affected by clear atmospheres, in which there is not sufficient change of air—as in deep valleys and thick forests. In the latter cases a breeze springing up will relieve the attack.

Next among direct causes are pulmonary lesions, such as bronchial inflammation or irritation (which may be coexistent with such diseases as measles or whooping cough, such bronchial lesions as may press on important nerves (as the vagus) or on branches of the pulmonary plexuses, will induce asthma; as also phthisis, emphysema, and spasm of the diaphragm and inspiratory muscles.

Such are direct causes; for indirect causes of asthma the history of the patient has to be minutely considered: Sufferers from malaria, whooping cough and measles may develop asthma. Heredity and family factors have been traced in forty per cent. of asthmatics. The disease may "run in families" in which the nervous machinery is characteristically unstable; other members of such families, if they have not asthma, may instead have migraine, or neuralgia, or neurasthenia or epilepsy. Hereditary or family tendency may not manifest itself in asthma until middle life; although the children of asthmatics may manifest symptoms during attacks of coryza or influenza or other inflammation of the upper respiratory tract. In the gouty, especially later in life, asthmatic seizures alternate with joint affections. Those who have had syphilis may have asthma later in life.

Improper diet—sea food especially—and an overloaded stomach, by which toxins from undigested material gets into the blood, are very prone to induce seizures. "Nocturnal asthma" comes frequently by reason of late suppers. Constipation is here also a factor. Kidney diseases may be accompanied by asthma, probably through the circulation in the blood

of toxic substances unexcreted by the kidneys, uterine and ovarian affections may be provocative. There is an intimate relation between asthma and such skin diseases as eczema, urticaria and psoriasis—no doubt by way of the circulation.

But, after all, the nervous system is the factor fundamental in most asthma cases. Either the vagus (pneumo-gastric) nerve or the vaso-motor (sympathetic) apparatus is disturbed; and thus are brought about the spasms of the bronchi and the turgescence of their lining mucous membrane. Such emotions as anger and fright may thus bring about paroxysms. So also we may understand how asthma may alternate with or be concomitant with such other nervous affections as neuralgia and angina.

FIVE YEARS TO ACQUIRE THE DEGREE OF DOCTOR OF MEDICINE.

SINCE the determination of French medical schools to require a five years' course in medicine, it is not unlikely that the leading educators in this country will consider the probabilities involved, and the needs of both student and prospective patient.

The preliminary work in general branches will assume a far different aspect. Grammar school, high school, college, and the medical school, represent a total of sixteen years, or if the student be required to repeat a year, of over that period of time.

This is a severe amount to exact of a man whose expectation of life is from forty-five to sixty years. He begins at an age of about nine years and, allowing sixteen years, finishes at the age of twenty-five. Then follow two years of hospital work, and the student commences to treat cases independently at somewhere near twenty-eight or thirty. Many men are older. Is it a fact that a man intelligent enough to become a physician needs sixteen years for preliminary study? How then if the four year course now demanded, should be lengthened to five years?

The best solution seems to be found in a compression of the academic work to essentials and a reduction of the college work to two years. We could omit some of the more special work in the sciences. This work really assumes particular importance in the medical sphere, but to the mind of the student, in whom little or no point d'appui exists, much of the chemical or electrical detail fails to unite, and only at the later day, in the concrete matter of treating cases does the student see the necessity of the matter involved. Then the mind becomes awake to the relation, and then comes the logical or psychological moment for learning.

As the four years of medicine pass by, the student sees within himself develop the taste for surgery, neurology, laboratory work, or clinical and medical efforts. As this occurs he will reach out to the proper electric, chemic, or mechanical provinces which are bounded by his chosen land. These topics, at such a time, afford proper elective branches, and room for them should be made, for chemistry, biochemistry, physics and electricity loom large upon the horizon of our newest work. In this manner a well-nourished course of four years could be arranged to succeed a two years' of genuine college work, which would, certainly, be advantageous. At the termination of the two years no degree would be given. At the termination of the six years a baccalaureate in medicine would be conferred. Then would be optional a fifth year's work, consisting of three electives: one major, one correlative minor, and one academic branch. Together with several months of interneship work, these three electives should be pursued, and, at the completion of the stadium, the degree of Doctor of Medicine conferred. The total of years needed in this general scheme would be fifteen, five of which would occur in the regime of the school of medicine itself.

The final year could be taken where desired, and the examinations taken at the home college. Such liberty would diversify the matter presented the student, and he would by so much gain in ability.

ATHLETES BREATHE WRONG.

A WRITER in the *Evening Post* can, in a long association with Athletes, recall only "one man who makes a point of breathing through the nose during a race." Immediately the "pinch" is felt, open comes the mouth, and the breath is taken in big gasps. Such practice is so general that athletes now assume this is the proper way to do; yet here they are entirely wrong.

The nasal organs are for the purpose of warming, filtering and cleaning the air before it enters the lungs. Under great exertion most people open the mouth, since they cannot take in air fast enough through the nose. Perhaps the general inability to breath through the nose only, under trying conditions, is because that organ has grown gradually smaller with the blessed advance of civilization, in proof of which the comparison is made between the nose of the negro and that of the average white. And it is held that ordinarily the civilized man now takes in but two-thirds the quantity of air he should, owing to the all-around shrinkage of the alæ. To remedy this a clergyman, the Rev. A. A. Barratt, has devised the "albar," a

contrivance by which the alæ may be extended, so that air can enter the nostrils in what should be normal volume. Possibly this reverend gentleman should be responsible for the breaking of many records, by reason of the benefit of inhaling increased oxygen before and during a race, through the use of the albar. Not only this, but by means of this instrument the air should enter the lungs through the proper course and not through the mouth; moreover athletes, cyclists, oarsmen, swimmers and the like will not suffer the horrible feeling caused by the dry tongue and mouth experienced in a strenuous contest, whilst breathing through the mouth.

Indeed correct breathing is through the nose alone; nor will the athlete and the sportsman alone find benefit from proper breathing; in point of fact the ordinary non-athletic citizen needs even more to study the matter. If all were to breathe through the nose (it seems but half civilization does that now) there would no doubt be a markedly reduced morbidity rate in consumption, influenza and other infections of the upper air passages; for it is unlikely the bacteria accountable for such infections ever enter the lungs by way of the nostrils. Correct breathing is indeed a vastly important matter, not only for the athlete but for the general public as well.

The Medical Record recently recognized this fact in noting that the normal type of breathing exists in children of both sexes up to the age when boys and girls begin to differ and change in dress. Then the corset begins to make the type of respiration in the girl superior costal or diaphragmatic, until it becomes entirely so; whilst that of the boy remains of the inferior costal type, which latter is the normal or desirable one.

Dr. M. Faire, in the Gazette des Hospitaux, finds that because the corset immobilizes the lower part of the thorax, the woman's type is the costal; and this results from a regression, a degeneration of the normal type. The primary object of respiratory education is to cause the child to preserve its costal respiration and make use of both the diaphragm and the ribs. The secondary object is to maintain the respiratory interval and expand the chest. It is a mistake to suppose that because a man is an athlete he therefore breathes well; a man may be a fair athlete and a bad breather.

A permanent increase in the expansion of the chest may be obtained by exercises, not necessarily with a view to competition in races. Singing and blowing are excellent; those exercises which develop the movement of the trunk are valuable—such as extension and flexion of the trunk and of the limbs with the body fixed, both in the dorsal position and in standing. Acrobatic gymnastics are useless; they tetanize the thorax, and practically develop only the muscles of the arms.

FAMILY DIFFICULTIES.

AS children grow up, money may proportionately diminish and the income of the father decrease. A physician called in to attend the father, or the mother, may notice a constrained attitude on the part of one child. Not infrequently the moment is one in which a family disagreement reveals the first outreaching of the child toward the world and a life of occupation. The child sees how remuneration in the world gives and enables one to attain enjoyment and recreation. The home begins to assume an unfair appearance. Home duties pall. There is a wearisome reiteration of daily tasks and the forever undone succession of little things needed in routine, accustomed in old people's lives, opens a vista to the child wholly unalluring. If the child is nervous, passionate, imaginative, he, or she, will react in a manner certain to produce quarrels. And thus an atmosphere of querulous dissatisfaction fills the house.

The physician may touch gently such sore spots. But if he is able to settle some of the real disagreements which come into bloom at this time, he will by so much reduce actual causes of illness, indigestion, headache, and even rheumatism and metabolic vices, for our minds do assist in bodily derangements under circumstances of sorrow and passion.

Vague longings for beauty and happiness in the growing adolescent seize upon the illusions of life. Only very serious and gentle sympathy can succeed in bringing within the range of childish experience the proportion of truth and utility in the aspirations he entertains, for the glamor of romance, atavistic and medieval, is reborn within his heart. The wonder of the stage, from the freedom of its possibilities, anesthetizes all reason.

The key-note must be sounded. The child must see that he is called upon to express, not to be impressed and diverted. If the stage in its power to convey ideas offers itself to the child as a medium, well and good. If any of the fine arts are natural to the child, how happy we should be to help the child enter his chosen garden!

No one can accomplish the good he wishes unless his heart is instinct with sympathy and raised to the degree of intensity which experience confers. To a trained and sensitive physician opportunities, such as difficult family affairs, are often points of genuine helpfulness in psychotherapeutic fields. We dimly perceive the unfolding of spirits whose true future is problematic and as yet undetermined, so that precious moments offer themselves to us for guidance and advice.

BIBLIOGRAPHICAL

The Anatomic Histological Processes of Bright's Disease and Their Relation to the Functional Changes. Lectures delivered in the Russel Sage Institute of Pathology, City Hospital, New York. By Horst Oertel, Director. Illustrated, octavo, pp. 227. Philadelphia and London, W. B. Saunders Company, 1910. Price $5.00.

These lectures deal with the morphology of nephritis in a manner different from that usually found in books. The author has emphasized relations and reconstructed the whole as a unit of interwoven processes. He has attempted to develop anatomical ideas of diseased processes and ability to construct their possible relations.

The student of Bright's Disease will welcome this book as the latest and best upon the subject.

A Treatise on Diagnostic Methods of Examination.—By Prof. Dr. Hermann Sahli, Director of the Medical Clinic, University of Bern. Edited, with additions, by Nathaniel Bowditch Potter, M.D., Assistant Professor of Clinical Medicine at Columbia University, New York; Visiting Physician to the New York City Hospital, etc. Second edition, revised. Authorized translation from the fifth revised and enlarged German edition. Octavo, pp. 1229, $6.50. Philadelphia and London, W. B. Saunders Company, 1911.

This is a second edition in English of Professor Sahli's renowned book, which has met with such popularity in this country, as well as in Germany. It is from the fifth German edition. The text has been thoroughly revised, and much new matter, including diagrams and cuts, has been added. The author has elaborated in his preface the substance of the changes which will be found, and this is a great convenience to students of former editions.

We may say that the work is most conscientiously and thoroughly done, and will satisfy the most fastidious student.

The work is standard the world over, and should find a place in the library of every practitioner of medicine.

Vaginal Celiotomy.—By S. Wyllis Bandler, M. D., Fellow of the American Association of Obstericians and Gynecologists; Adjunct Professor of Diseases of Women; New York Post-Graduate Medical School and Hospital, etc. With 148 original illustrations; large octavo, pp. 450; $5.00. Philadelphia and London, W. B. Saunders Company, 1911.

This classic work can be highly commended to such of our readers as are interested in its subject.

The text is fully illustrated with practical drawings, which make the operative procedure clear.

This book will become standard.

Induced Cell.—Reproduction and Cancer.—The isolation of the Chemical Causes of Normal and of Augmented Asymmetrical Human Cell-Division. By Hugh Campbell Ross, M.R.C.S. (Eng.), L.R.C.P. (Lond.), Surgeon, Royal Navy (Emergency List); Director of Special Researches at the Royal Southern Hospital, Liverpool, etc. Being the results of researches carried out by the author with the assistance of John Westray Cropper, M.B., M.S.C. (Liv.); M.R.C.S. (Eng.); L.R.C.P. (Lond.). Assistant to the Research Department of the Royal Southern Hospital, Liverpool. With 129 illustrations, octavo, pp. 423, $4.50. Philadelphia, P. Blackiston's Son & Company, 1911.

This book describes in detail the results obtained by a new method of experimentation with individual living human cells, their importance in the elucidation of the phenomena of healing, and in the causation of cancer and other growths.

This new method has revealed many interesting facts which may be far-reaching in their influence in the advancement of pathology.

The book is worthy of study.

The Treatment of Disease (A Manual of Practical Medicine).—By Reynold Webb Wilcox, M. A., M.D., LL.D., Professor of Medicine (retired) at the New York Post-Graduate Medical School and Hospital; Consulting Physician to St. Mark's and to the Nassau Hospital, etc., etc. Third edition, thoroughly revised and enlarged. Octavo, pp. 1023, $7.50. Philadelphia, P. Blackiston's Son & Company, 1911.

The present edition of this valuable work represents careful and thorough revision with substantial additions, the more recent methods of diagnosis and especially the therapeutic resources at the command of the practitioner at this day. Forty-three sections covering as many subjects have been added.

The text has been written with the practical needs of the practitioner always in view.

The author recognizes the desire on the part of the physician to increase his knowledge of therapeutics, whether physical, medicinal or dietetic, because it is from a thorough and broad view of therapeutics, in its larger sense, that he will achieve his greatest success.

The author of this work is fully alive to the therapeutic awakening which is now being experienced. The book will be found of great service.

The History of Medicine, Philosophical and Critical, from its Origin to the Twentieth Century.—By David Allyn Gorton, M.D. In two volumes, octavo, pp. 436 and 497; 37 illustrations. New York and London, G. P. Putnam's Sons, 1910.

The author says he has endeavored to give to this work a comprehensive review of the evolution of the art and science of medicine from its beginning, and at the same time to set forth its institutes, or the principles upon which it is founded.

He has traced the development of medical systems and hypotheses, of sects and theories, and has pointed out their influence in directing the course and progress of medical science and art, and in our opinion the work has been superbly done.

The subject has been divided into periods, for convenience of study, the text is presented in a scholarly manner, is most interesting; in fact, some of it fascinating. We know of no one who could have done the work so well.

The work has been done in the interest of the rising generation of medical students, as well as the profession generally, but as the history of medicine and its relative sciences is largely that of civilization, it cannot fail to be appreciated by scholars in all the walks of life. The author has spared no pains to be accurate, and we see no reason for any one to feel aggrieved, by anything he has said in the way of criticism.

The work will stand as a monument to the author's well-known scholarly attainments and erudition.

We regret that our space will not afford a more ex-

tended review, but we can urge our readers to obtain a copy and read for themselves to their pleasure and enlightenment.

Primer of Hygiene.—By John W. Ritchie, Professor of Biology, College of William and Mary, Virginia, and Joseph S. Caldwell, Professor of Biology, George Peabody College for Teachers, Tennessee. Illustrated, 12mo, pp. 184. Price 40c. World Book Company, Yonkers, N. Y.

The authors of this little booklet are right in asserting "that the greatest immediate service our schools can perform is to put their pupils into possession of those facts that will relieve the people of the great burden of preventable disease which they are now carrying," and they have furnished in simple language a work to this end.

We heartily commend the book for its purpose. It is one of the "New-World Science Series," all of which are worthy.

Three Contributions to the Sexual Theory.—By Professor Sigmund Freud, LL.D., Vienna. Authorized translation by A. A. Brill, Ph.B., M.D., Clinical Assistant, Department of Psychiatry and Neurology, Columbia University, etc., with introduction by James J. Putnam, M.D. Octavo, pp. 91, New York, The Journal of Nervous and Mental Disease Publishing Company, 1910.

The subject is divided as follows: The Sexual Abberations; The Infantile Sexuality, and The Transformation of Puberty.

This eminent author has worked out, with incredible penetration, the part which the instinct plays in every phase of human life and in the development of human character, and the importance of a perfectly normal sexual life.

The subject is profound, most important, and worthy the study of the sociologist as well as the physician.

International Clinics, a quarterly of illustrated clinical lectures and specially prepared original articles. Edited by Henry W. Cattell, A.M., M.D., vol. IV. Philadelphia and London, J. B. Lippincott Company, 1910.

The fourth volume in the twentieth series contains the following articles:

An elaborate account of Ehrlich's new preparation, Arsenobenzol (606), in the treatment of syphilis; the method of examining the blood of greatest importance for the general practitioner; the management of four kinds of appendicitis; refraction by the general practitioner; physicians' fees down the ages and numerous other interesting matter.

Chilblain is prone to affect children and adults of low vitality and poor circulation; the most common site is the toes, although other exposed parts may be affected. The skin is swollen, bluish-red, and burns or itches. In the treatment the general health must receive careful attention. The feet must be warmly clad; and exposure to cold and dampness must be avoided. Externally we make a stimulative application—spirits of turpentine or Balsam of Peru is gently rubbed upon the affected skin at night; or flexible collodion or solution of gutta percha may be kept constantly applied. Superficial ulceration would require ℞ Aristol 2 parts, Balsam of Peru 3 parts, and Petrolati to 20 parts.

CORRESPONDENCE

A NEW POINT IN MEDICAL ETHICS—THE CONTROL OF LABORATORY PRODUCTS.

To the Editor of the MEDICAL TIMES:

"606," the new synthetic compound of arsenic, various forms of tuberculin, derivatives of human thyroid and some tentative cancer sera are among the modern additions to our armamentarium which have been brought to the attention of the profession before the supply was adequate for general distribution or, in some cases, before the discoverers, or rather, inventors, were ready to divulge the exact nature of the product with which they were experimenting.

It is apparent that, however moderate the claims made for such agents, especially when the disease to which they are applicable has a high mortality under ordinary therapeusis, the control of supply creates a monopoly which may have a considerable commercial value and which also deserves attention by the profession in the interests of the patient not only on account of the possibility of injurious effects of the treatment but because, quite aside from this point, the profession generally has a moral responsibility in regard to the exploitation of the patient for private gain.

An actual case may be cited to illustrate the conditions which may arise from the monopolization of a therapeutic product. A patient consulted a specialist with regard to a lesion of the rectum. As soon as the examination was completed, the physician refused to treat the case until it was passed upon by a surgeon first to verify or dissent from the tentative diagnosis of cancer and, secondly, either to operate promptly, if possible, or, if the case were either declared to be noncancerous or cancerous but inoperable, to remand the patient for palliative treatment. The patient urged preliminary treatment but this was declined on the ground that delay would prejudice the patient's interests.

The surgeon, as expected, confirmed the diagnosis of cancer, but considered that it was inoperable. He proposed, however, the use of a cancer serum. The former attendant expressed a willingness to employ the agent, subject to the consent of the patient after explanation of the experimental nature of the treatment and in conjunction with ordinary palliative measures. It was explained to him, however, that the new agent was not at the disposal of the profession generally but only of the laboratory staff and its attachés including the surgical consultant. It should be stated that the employment of the agent involved no special difficulties of technic but only aseptic injection and that no request was made by the former attendant for a donation.

We believe that, not-with-standing the inclusion in the old code of ethics, of a provision against the claim of superior skill, any surgeon or other specialist may, under proper circumstances, rightly propose to use himself, methods obviously beyond the technical ability of the generality of the profession. In the case cited, the first physician both implicitly and explicitly admitted this fact, as a matter of courtesy in submitting his diagnosis for verification or revision, and as a matter of practical procedure for the best interests of the patient in advising operation, if feasible, by one possessed of a degree of surgical skill which he did not claim for himself. The substitute method of treatment proposed, however,

involved no special degree of skill nor recognition of the limitations of specialization, even as a matter of courtesy. It could not be claimed, as has been done with considerable reason for thyroid therapy based on human thyroids, that the material was not available. It was available for this particular case, provided that the case was surrendered. Nor was there any disposition to beg the material nor to haggle over price. The general problem as to the advisability of the method did remain sub judice and, from the nature of the circumstances, largely subject to the decision of the former attendant. Let us not consider the ethics of monopolization of the product by one not concerned in its development but merely happening to enjoy special privileges in regard to its use. Rather, let us turn to the ethical problem presented to the man who asked for surgical skill and was given a different choice. From his standpoint, the ethical problem involves both the interrelations of professional men and the relations of physician and patient. Imagine the difficulty of putting aside not only selfish interests but the question of medical fairplay and of deciding impartially and solely for the benefit of the patient, whether, in the first place, a comparatively untried method of therapeutics is safe; in the second place, granting that the treatment itself was harmless, whether it would offer a reasonable chance of alleviation; whether, with the decision still in its favor, the method should be preferred to approved but merely palliative methods or, finally, whether a bolder surgeon should not be sought in the hope of securing eradication by the knife. The very fact that selfish interests are at stake in such a decision, especially when due, not to differences in skill but to arbitrary factors which may be considered mercenary or due to selfish pride, materially interferes with an impartial judgment. The question of fact, as to the merits and demerits of the treatment must be disposed of in advance, without opportunity for tentative, personal, application of the therapeutic test, but from a consideration of conflicting and perhaps biased testimony. The very effort to be conscientious and self-sacrificing might lead to advising the patient to undertake a course of treatment not even so efficacious as the palliative measures already approved. Indeed, if the same problem came up with regard to any other disease than cancer, or one practically prognosticable as hopeless, the decision would be still more difficult since the unfavorable outcome of the new remedy would lead to the conviction that there had been sacrificed at least the chance of cure by other means.

On the other hand, it must be admitted that, in respect to many new remedies, the elaborators may rightly feel that indiscriminate use by the profession at large would involve an element of danger; or it may be impossible to place the remedy on the market, either on account of inadequate supply or instability, or other purely physical reason. Nor, when the duty of collaboration is fully realized, is it always justifiable to withhold information regarding results and aspirations until methods of preparation are fully elaborated and an adequate supply is available. The problem is further complicated, in a double way, by the scientific attainments and prestige of the inventors of remedies of the class under consideration. On the one hand, deference to the opinions and decisions of these inventors makes one hesitate to criticise them; on the other, these very attributes place them in possession of power which may be abused. Yet, they should be protected, even contrary to their own volition, from censure based on specious appeals to fairness.

We have endeavored to present the problems involved judicially and impartially. We cannot, however, refrain from expressing the opinion that the whole subject should be considered both from the ethical and the humanitarian standpoint, by a committee of the profession, of unimpeachable judgment and fairness and that after careful deliberation, general rules should be laid down for the guidance of the profession. *

THE MEDICAL PROFESSION MUST CHANGE ITS TACTICS.

To the Editor of the MEDICAL TIMES:

He who is not a frequent visitor to radical clubs, does not come in contact with newspaper men, with New Thoughters, and does not read regularly the numerous naturopathic, health culture and physical culture journals, and other allegedly advanced publications, can have no idea how the medical profession is ridiculed, how it is maligned, how it is lied about, how it is misrepresented, how it is "knocked" on every possible occasion.

We are pictured as ignoramuses, grafters, butchers, anxious to operate whether there is a necessity or not, drug dopers, etc., etc. We are denounced as a trust, monopoly and any attempt of ours to organize, to pass laws protecting the public health is characterized as an attempt at class legislation, a desire for special privileges, inspired by our fear of the competition, by our fear of the superior skill of our irregular rivals.

And the average physician who has not given the matter any thought, has no idea what effect these unceasing slanders and persistent lies have on the public mind, how suspiciously a large part of the public is beginning to look at the medical profession, how we are losing the confidence of the people, how the ground is slipping from under our feet.

As an illustration we need only mention the reception that has beeen accorded to the suggestion of a Federal Department of Health. The motives that actuate us and the objects of such a department were at once misrepresented, the people were made to believe that their freedom to choose a medical adviser was threatened, the forces of reaction and obscurantism, masquerading in some instance under the guise of liberalism, were quickly marshalled and in a short time a society was organized, which now claims a membership of one hundred and fifty thousand.

We, physicians, are ourselves to blame. When the irregular, fantastic and pernicious cults began to make their appearance, we paid not attention to them. We thought they amounted to nothing, and would soon dry up and shrivel away of themselves. When the malicious attacks began to appear in the various quack publications, we remained silent. We considered it *infra dignitatem* to pay attention to them, and we thought that the public would have no difficulty in seeing through their falsity and meretriciousness.

Our long and patient inactivity has been due to the false idea that truth will always triumph and error is bound to die. Yes, eventually. But if error is allowed to grow and spread unhampered, while those who see the truth will not take the trouble to proclaim it and expose the error, then it can take centuries before the

correctness of the truth and the falsity of the error will be perceived.

In this as in every other line of human activity prevention is immeasurably superior to cure, and the right way to fight error is not to permit it to get a firm foothold. Error and superstition are hard things to uproot after they have attained the dignity of a universal belief.

It is time that the medical profession change its tactics and assume a wideawake, militant attitude. It is time that we actively attack error wherever it shows its head. By reading papers before lay audiences, by participating in discussions, by writing to the newspapers, by refuting the false arguments of the false prophets wherever they appear, we can do much toward destroying the influence of the quacks and the irregular cults. In short, we must throw off our exclusiveness, we must go out to the public and take it into our confidence.

The truth is within us—that we know; only we must not hide it under a bushel, and expect that its light will, without any effort on our part, penetrate into the darkest recesses of ignorance and quackery.

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RETROSPECTIVE

Sulph-Hemoglobinemia is a newly discovered disease of as yet unknown etiology. Dr. T. W. Clarke, of Utica, N. Y., and Dr. R. M. Curtis, of Paterson, N. J., have reported the "First Case in America" before the Medical Society of the State of New Jersey. A characteristic is the presence of sulphuretted hydrogen in the blood. The disease, which these physicians describe in *The Medical Record,* is supposed to be the result of faulty intestinal function. A distinguishing symptom is the deathly color of the patient. The case presented has a very striking clinical picture; it is of exceptional interest from the standpoint of physiological chemistry; though Clarke and Curtis do not consider it the first of its kind that has occurred in America, they do maintain it to be the first to have been diagnosed in America, and the eighth described in medical literature. In the winter of 1908-9, one of these physicians, having returned from London to do work in the Rockefeller Institute for Medical Research, was invited to speak before the Passaic County Medical Society, and chose for his subject *The Rare Forms of Cyanosis, Polycythemia, Methemoglobinemia* and *Sulph-hemoglobinemia;* a few months later the patient reported appeared in the office of his colleague, who was present when the paper was read.

This patient, a woman 24 years of age, had never been robust, having suffered many female affections. A few days previously to her appearance she had found her lips blue and her color ashen, though she did not feel ill. She was somewhat weak. Later her skin became steel-blue and her lips purple-black; she then appeared cadaveric and "of the ghastly hue seen in a person standing under the Cooper-Hewitt mercury light." Her appearance was so striking that on many occasions, while going through the streets, she was advised by sympathetic people, believing she was gravely ill, to go home. Physical examination disclosed, however, only the remarkable discoloration of the entire body. The heart and lungs were practically normal. Blood examinations extending over some weeks failed to reveal any polycythemia or other abnormality to account for the condition. A tentative diagnosis of sulph-hemoglobinemia was made; and in November, this patient was sent to New York for consultation and a spectroscopic blood examination. When seen at the Vanderbilt Clinic she presented the same characteristic appearance as did two cases seen in London; the practically complete absence of signs of impaired heart and lungs was confirmed. The patient was then admitted to St. Luke's Hospital, where she was kept three weeks under observation. Bacteriological and chemical examinations gave findings corresponding to those seen in cases in Rotterdam and London; but no light was thrown on the origin of the sulph-hemoglobin. The patient improved greatly in St. Luke's; but since her return home the disease has remained stationary. The case was concluded to be one of idiopathic sulph-hemoglobinemic cyanosis.

The diseases methemoglobinemia and sulph-hemoglobinemia are easily differentiated. They are probably neither of them common; yet they are not so rare as would appear. In every instance when attention has been called to their existence one or more cases have promptly come to notice; and many an experienced clinician has remembered that at some time or another in his experience he has seen a case which, in the recollection, he believed to be one or the other of these diseases.

Two factors are essential for the diagnosis: the physician must know of the existence of the enterogenous cyanoses; and he must examine the blood with the spectroscope. The latter is in reality a simple procedure requiring but little technical ability. The blood is drawn from a vein (or a few drops from the finger or ear will suffice), it is immediately diluted with twice its volume of distilled water before clotting has taken place; and the mixture is thoroughly shaken. After the fibrin has separated the solution is filtered several times through one filter paper, and the clear solution is looked at through a spectroscope—a simple and inexpensive instrument. The solution is then diluted drop by drop with water until the red color stands out clearly. A black absorption band in the red indicates either methemoglobin or sulph-hemoglobin. If such a band persists after the addition of a drop of dilute ammonium sulphide the pigment is sulph-hemoglobin; this is all that is required for a clinical examination. Differentiation is here essential to prognosis. If the malady is not diagnosed, the patient's appearance, suggesting immediate dissolution, would lead to a grave prognosis. Whereas the malady, when recognized, will warrant a hopeful outlook, though complete recovery will require weeks or months. Clarke and Curtis present the case in the confident belief that with a dissemination of knowledge of such diseases many more cases will be recognized; and they hope that each case found by others will be carefully studied, so that many of the mysteries in the etiology of the idiopathic or enterogenous cyanoses may be solved.

Ehrlich's Instructions Concerning Salvarsan (606).—Dr Ehrlich has issued a circular letter in which he gives his latest ideas as to the methods of administering "606." He says that over 40,000 ampullas of the preparation have been distributed and reports have been received concerning its use. These reports have

pretty well settled the dose, indications and contra-indications. It should not be used in cases of atrophy of the optic nerve, but may be applied in other syphilitic diseases of the eye, especially gummatous iritis, but should not be used in severe diseases of the nervous system or of the heart and blood vessels. The first phase of the trial may, therefore, be considered as closed. We now begin the second period which concerns the permanent results of the remedy. These will depend on a series of circumstances, especially the size of the dose and the method of application, and second, the nature of the disease. The permanent results will be greater, the more decided the first therapeutic impressions. This, naturally, increases with the size of the dose and the rapidity of absorption. From this standpoint, the most efficient methods are (1) intravenous injection; (2) intramuscular injection of an alkaline solution; (3) the markedly irritating acid injection, (4) and the so-called neutral emulsions. He considered that in the first phase the greatest freedom should be allowed to the experimenters in the choice of a method, as only in this way, by a comparison of results, could an idea of the relative value of the different methods be obtained quickly. But it has already been established that the methods most applied, either the intramuscular or subcutaneous injection of the neutral emulsion, have less value as far as permanent results are concerned. This may depend on the fact that it is more difficult to prepare these emulsions with absolute uniformity and minuteness of subdivision, which results in a variability in the rapidity of absorption; and in many instances the therapeutic effect by this method was not sufficiently intensive to secure in general the sterilization of destruction of the spirochete. The intravenous injection gives better results. The technic is simple, and in a proper selection of cases is free from danger, and for many patients much more pleasant. There have been over 1,000 cases already treated by the intravenous method. As an intravenous injection, Alt injects at least 0.3 to 0.4 or 0.5 gm.; some give still larger doses, 0.7 to 0.8 gm. The intravenous injection can be repeated after two or three weeks, according to the need of the case, if the curative effect of the first injection is not complete and the Wasserman reaction is still positive. So far, indications of a hypersusceptibility have not appeared, although in many instances intravenous injections have been employed two, three, four or five times. Ehrlich says that the reports that have reached him indicate that the intravenous method deserves prominence over the other methods, especially the subcutaneous. He does not overlook the fact that this method will meet certain technical difficulties in ordinary practice: still it is important in the interest of patients to secure at once the most effective treatment. The ultravenous method is therefore recommended by Ehrlich at least for hospitals and clinics. The things to be especially considered are the following: 1. The disease should be put under treatment as promptly and early as possible, as it generally occurs in robust young individuals. They should be treated with at least 0.5 intravenously. In addition it would be advisable, in the interest of actual sterilization, to employ an energetic local treatment, extirpation, cauterization, or some of the other methods used. 2. In diseases of the central nervous system and the circulatory apparatus, so far as these are really suited to treatment, the greatest caution is advised, and small doses, 0.2 to 0.4 should be used; but whether in these cases the intravenous method does not deserve the preference over the forms of application heretofore used, has not yet been sufficiently determined. Ehrlich, therefore, advises that in the future, as far as possible, the intravenous injection should be used.

Self-Purification of Streams.—Dr. F. G. Ruediger (N. Y. Med. Record) has found that colon and typhoid bacilli disappear much more rapidly from polluted river water during the summer months, than during the winter months, when the river is covered with ice and snow. The destruction of these germs in the river water in summer is in large measure due to the growth of microscopic plants and other organisms, which apparently give off dialyzable substances harmful to B. coli and B. typhosus. Several years ago Frost clearly showed that such substances were given off by the saprophytic bacteria; and Ruediger's experiments simply confirm those of Frost's, though attacking the problem in a slightly different way. The effects stated were lost in the winter, as no growth took place after 0° C. The sun's direct rays were an important factor; their effects were entirely lost when the river was thickly covered with ice and snow. Ruediger's investigation was of practical value; it explained why some of the northern cities, where sewage polluted river water is used in the water-works system, are more frequently troubled with outbreaks of typhoid fever during the winter months. This fact was illustrated by Minneapolis last winter; and, no doubt, also by Lawrence, Mass., before the installation of its filter. When bacteriological analyses of sewage polluted river water are made at the site of a proposed water-works intake pipe, it is important that samples should be collected and analyzed both in the winter and summer. Such summer samples do not give reliable information regarding the condition of the water in question when the river is covered with ice and snow. Analyses show that the pathogenic bacteria from the sewage travel several times as far in the water under the ice, before they are destroyed as they would in an open river, during warm weather.

In the discussion Dr. H. W. Hill, of Minneapolis, Minn., corroborated Ruediger; and stated that B. typhosus might die out in going down the river in summer under conditions where they would exist during the winter. Dr. P. H. Boyce, of Ottawa, Canada, considered the question of sedimentation; and instanced Pettenkofer's test at Munich, which showed that 90 per cent. of all bacteria in water by dilution and by sedimentation had disappeared within a distance of ten miles. Dr. E. C. Levy, of Richmond, Va., stated how at a previous meeting he and Dr. Freeman had brought out the point made by Dr. Ruediger, but had not attempted to explain why water-borne typhoid was a disease of winter months; but they proved to their satisfaction that such was the case, arriving at their opinion from an epidemiological standpoint; they had then no laboratory facts to corroborate this.

The Book-Keeping of Science.—Vital statistics have a non-medical value that seems not to be sufficiently appreciated. Only physicians are supposed to be interested in the passage of laws regulating vital registration; and here the laity gives little consideration. Yet vital statistics are registered primarily for legal purposes—the protection of the rights of the in-

dividual and of the people associated with or dependent upon him. The recording of births and mariages is really of no advantage to the medical profession as such; physicians are interested in these statements only as they contribute to sociological or economic knowledge. The recording of deaths is useful to physicians only in affording information regarding the frequency and mortality of given diseases. The subject of vital statistics should greatly interest all citizens; because every individual should be able, if necessary, to produce legal evidence of his birth and parentage. Records should be made of the time, place, manner and cause of death of every human being. Registration of vital facts (the bookkeeping of civilization) is most valuable in determining questions involving parentage. Legitimacy, inheritance, property rights, marriage and divorce —in fact, in most of the social or business relations of life. The value of proper registration of such essentials has long been recognized in all civilized nations —except the United States; the utter neglect in many of our States has long astonished European visitors.

Mr. W. J. B. Deacon, of the Kansas State Board of Health, accounts for our neglect of such fundamental matters by the comparative newness of our social organization. Each State, as it becomes older, and as its social relations become more complicated, will have to provide some effective means of registering essential facts regarding its citizens. The reason for our neglect in these regards must surely be that the legal and social importance of vital statistics registration has never been properly brought to the attention of the people. It is not conducive to our communal pride to realize that such countries as New South Wales, Tasmania, New Zealand, Ceylon, Jamaica, Finland, Roumania, Bulgaria, Japan and Chili are far ahead of the United States in the proper registration and preservation of records on vital matters. Nor is it gratifying to be informed by Mr. Deacon that, as regards vital statistics, we must be classed with Africa and Borneo.

The Functional Conditions of the Stomach and Intestines are considered by F. Billings (Illin. Med. Jour., Sept., 1910) with relation to gallstone disease and cholelithiasis. Nausea and vomiting usually attend acute gall-bladder infection, or billiary colic. There may be epigastric pain between attacks. Spontaneous or induced vomiting may give relief; as may also a simple carminative. Of sixty cases, in which the digestive power of the stomach was noted, fifty suffered from cholelithiasis with cholecystitis and the remainder from cholecystitis with cholelithiasis of the gall bladder and the common duct. Most of these patients had practically normal gastric juice. In a few cases the total acidity was high—122, 112, 116; in a few others the total acidity was low, with no more total acidity than would be expressed by the acid phosphates of a test meal. All the remainder showed normal acidity. Hyperchlorhydria was found in only a few cases. Motility was disturbed in 45 of the 60 cases during acute exacerbations of the disease. Between the paroxysms there was practically no anatomical insufficiency of the gastric muscle. The fasting stomach of the morning was empty in every patient examined; in all but two cases there was an entirely empty stomach with a seven hour meal. With two exceptions there was an absence of blood in the stools. It would seem that the digestive power of the stomach was not disturbed by cholecystitis except in acute attack or in exacerbations of the chronic disease; the disturbance was then due to pain and was manifested by nausea and vomiting. Billings found constipation the rule in cholecystitis and gallstone disease. Clay stool and fetor accompany obstruction of the duct and jaundice. The absence of bile from the intestinal tract results in loosened peristalsis and flatulence; and there is more free fat than normal in the stool because of the loss of influence of the bile upon the digestive power of the enteric and pancreatic juice.

The Traumatic Neurosis.*—Thanks to the study of psychopathologists a clearer notion of the traumatic neuroses is gaining currency. Until, however, courts of law become acquainted with the conception of the ideogenesis of hysteria one cannot too often place before Medical Jurists the facts upon which depends a solution of the traumatic neurosis evil.

The psychological point of view which is the product of such facts has connotation very different from its ancient metaphysical one; for it is purely biological, being expressed in terms of organismal reaction to environment, that reaction, however, being of the labile differentiability which distinguishes it from the invariable reactions of the lower neurones as revealed in the physiological laboratory. Its behaviour can none the less be expressed in terms of laws and it is subject to experimental investigation, which shows a constancy of reaction to stimuli no less than that of the lower neurones, although of course disturbing factors are infinitely more abundant, and the neuronal paths are indecypherably complex with our present knowledge.

However, comparative simplicity in practice characterizes most of the problems when they are approached with the fund of knowledge of neuropathology and clinical diagnosis possessed by the well-trained neurologist. So that the court of law can be approached with a clear judgment backed by incontrovertible facts suceptible of appreciation by the layman whether judge or jury. The best proof is an illustration.

It is a case reported by the author in full to the second International Congress for Industrial Accidents at Rome and published in *New York Medical Record*, October 2, 1909.

After bruising his back by a fall from a car, a railroad brakeman remained for six months very lame; and the sensibility of the lower limbs appeared to be lost. His tint had become sallow, and he was sleepless, sad and cried much. The neurological examination reported with the case showed that there was no destruction of the nervous elements. The disability was shown by psycho-analysis to be a function of the false fixed-idea induced by the belief derived from his environment and some of his doctors, that such symptoms as he showed could and should follow such injuries as he had had. One sitting sufficed to begin the correction of the false notion; and he himself completed the persuasion, and was able to return to work in a month:

It is shown that the loss of appetite, insomnia, emaciation, and unhealthy tint of the skin were secondary to the mental worry concerning the circumstances in which he was placed through his fixed ideas, the false belief that he was irretrievably damaged in his spinal cord, and would be unable to earn a living for himself and

*By Tom A. Williams, M.B., C.M., Edin., Washington, D. C., Arch. Int. de Med. Légale.

family; and his whole *affective* tone thus became morbid secondarily to an idea derived by suggestion, as appeared.

Of course, shock perturbs the neurons, but does so temporarily. The physiological law of fatigue permits of no exception. A neuronic system can only energize for a certain time. Even the spinal reflexes soon become exhausted; and the more complicated psychic reflexes much more quickly. The autonomic system has a slower rhythm than the cerebro-spinal, yet it soon tires. A blush lasts only a few minutes. The "goose-flesh" soon passes, even though cold continues. The cold sweat of fear is no more permanent. Even "fright-palsy," which is largely conditioned by an idea, soon recovers as the circulation resumes its normal tone.

Hence the persistence of the incapacity induced by the shock of the accident is intellectual, and not *due* to the primitive emotion. It is really a false belief which determines untrue acts, untrue in the sense of the bad adaptation to environment. The process by which the false belief arises may be termed suggestion, for it is an idea unmodified by other corrective or inhibitory ideas.

Inhibition has been invoked very differently by many writers on hysteria, who believe that a cortical center is prevented from functioning by this negative cause. *Babinski* and his followers, have made it clear, however, that the abeyance of function is not inhibitory, but kinetic, and that a patient is positive, rather than negative, in his attitude towards his disability.

Again, hysterical anorexia is not due to failure of the function of eating, but is due to the positive notion of not eating. A hysteria incapacitating locomotion is not due to the absence of power to walk, but is due to the positive idea of not walking. This is not a mere quibble. A hysterical manifestation is not due to the absence of something needed for normal adaptation, but is due to the presence of something redundant, namely, the false fixed-idea which determines the patient's autopsychic or allopsychic misconduct. The case illustrates these points most clearly.

The corrollary of these principles is that a hysterical outbreak merely connotes a sufficiently powerful suggestion in a susceptible person. Now, susceptibility to suggestion is as variable as that to tuberculosis or malaria. No one is quite immune. We can measure none of these, but we can test any of them, although it is not always advisable to do so. When necessary, however, as in a medico-legal case, this can always be done: for attention, perception, memory association of ideas, fatiguability, and even the emotional reactions can be sufficiently and accurately estimated for clinical purposes.

Hence the medical man need no longer rely upon vague impressions of nervousness or hystericalness; for it is his duty to estimate these as accurately as he counts blood corpuscles, or ascertains the reaction to tuberculosis. It is only by such experimental methods that our art can remove the reproach it has justly incurred regarding the cure of so-called traumatic neuroses.

Arterial Hypertension.—A. R. Elliott, (Am. Jour. Med. Sci., July, 1910), believes that a certain measure of drugging is applicable in cases needing the regulation of high blood-pressure. Drugs will not help where high pressure is dependent on anatomical change in the vessel walls; but the added condition of spastic contraction of the vessels causing much of the functional distress in these cases may well be amenable to drug therapy. Moderate pressure, without serious subjective symptoms or physical signs, needs no medication. The higher above 200 mm. the pressure rises, the more we must fear impending breakdown of heart or artery; and one should consider what advantage may be secured by vasodilator medication. Before instituting treatment we must determine: the degree in which vasodilator response is retained by arteries; and the functional adequacy of the heart muscle. A rough estimate of the former may be had by giving — gr. 1/100 nitroglycerin, and carefully noting its effect on systolic pressure for at least half an hour; in the event of no response or but trifling response, vasodilator therapy will prove futile. In patients who have never experienced the action of nitroglycerin, several fractional doses at short intervals rather than one dose had best be given; we would thus avoid such syncope as might otherwise develop. Excessive blood range (especially if observations indicate vascular spasm) require nitrites. Sodium nitrite (which is best suited for routine use) may be begun in doses from ½ to 3 grains every 2 to 6 hours, depending on the severity of the symptoms. The dose should be small at first, gradually increasing until effective, or until failure is obvious. Some cases show a reduction of from 10 to 15 per cent. in the average blood pressure range, with reduction of symptoms; others show no reduction, even a slight rise, in the average pressure, though the symptoms may be distinctly ameliorated. The nitrites are inappropriate in Bright's disease, except to meet emergencies. A routine plan would be to combine sodium nitrate (2-3 grains), potassium nitrate (10 grains) to be taken in hot water t. i. d. p. c. Spiritus ætheris nitrosi in teaspoonful doses several times a day may modify the discomforts of high pressure. Iodides given with the nitrates may improve arterial pressure. Cases with advanced arterial degeneration and impaired vasomotor tone require iodides (for long periods) rather than nitrites. When there is ventricular weakness the nitrites, if given at all, should be combined guardedly with cardiac tonics, the effect of nitrite therapy in such cases being to produce rapid heart action, depression and dyspnœa. The dangers of overexertion should be emphasized. A case showing high pressure does not debar digitalis; since this drug, in physiological doses, rarely increases pressure sufficiently to endanger the vessel wall; on the contrary a blood-pressure fall is not uncommon under digitalis.

Mistaken Diagnosis.—R. C. Cabot (J. A. M. A., October 15, 1910) urges his colleagues: Never to diagnose uremia in a patient seen for the first time in an acute illness characterized by coma or convulsions; such conclusions rarely turn out correct. Never to diagnose ptomaine poisoning without definite chemical evidence; general peritonitis or a tabetic crisis is usually a more correct conclusion. Do not diagnose hysteria, neurasthenia or psychoneurosis in a patient whose symptoms begin after the 45th year; arteriosclerosis, hyperthyroidism, dementia paralytica or pernicious anemia are more likely to be the truth. Diagnoses of tertian malaria in patients whose symptoms resist quinine more than three days are almost invariably wrong. Bronchial asthma after forty is likely to spell heart or kidney disease; epilepsy after forty probably means dementia paralytica or cerebral arterio-

sclerosis. Typical migraine is often a symptom of unrecognized brain tumor of chronic nephritis. Most "bronchitis" cases mean tuberculous broncho-pneumonia or multiple bronchiectatic cavities. Aside from the immediate results of acute infections (scarlet fever, diphtheria, tonsilitis and pneumonia) "acute" nephritis usually turns out to be chronic. Acute gastritis and gastralgia usually mean appendicitis, gall-stones or peptic ulcer. Pus in or near the liver is often mistaken for serous or purulent pleurisy, for it produces identical signs in the right chest posteriorly. An X-ray of the shin-bones may give the first hint of an active syphilitic process in the joints or internal viscera. Systoltic or presystolic murmurs, heard best at the apex of a markedly enlarged heart, rarely mean valve lesions. Diastolic murmurs at the base of the heart are very uncertain evidence of aortic disease, unless there are characteristic jerkings in the peripheral arteries. The diagnosis of myocarditis is never to be made clinically. Besides the direct evidence afforded by the history and the various methods of physical and chemical examination, diagnosis profits most by taking account of certain familiar pathological chains or groups; given one or two members of the group, it is often wise to act as if the other were present, provided, of course, that the desired evidence is in no way contradictory. Cerebral localization, applied to tumors, hemorrhages and the like, is still in its infancy. The clinical diagnosis of the so-called blood diseases, is the easiest and safest in medicine.

Fibrinous, Plastic or Croupous Bronchitis is a comparatively rare acute or chronic disease, in which fibrinous casts of bronchi, either single or grouped, are expelled in paroxysms of dyspnœa and coughing. The causation is unknown; this form of bronchitis is frequently idiopathic; the debilitated and the middle aged (from 20 to 40) suffer most; the disease is most manifest in the spring of the year.

The pathology. The bronchial mucous membrane is congested; the epithelium is either intact or desquamated. There are white or cream-colored casts or "Bronchial trees" consisting of rolled up inspissated mucin, mixed with sputum, blood corpuscles, fibrin, epithelium, Leyden's crystals, Curschmann's spirals, fungi such as the aspergillus fumigatus, and protozoon-like bodies.

The symptoms: In acute fibrinous bronchitis these are as in simple bronchitis accompanying pneumonia, typhoid and the exanthemata; we may here sometimes have chill and high fever. There is dyspnœa and cough with which casts are expelled, perhaps with hemoptysis. The expelled casts, when unfolded in water, will be found distinctive. Temporary relief is followed by recurrence of symptoms within a few hours. The attacks become progressively less severe. Possibly a paroxysm may end in death from asphyxia. In the chronic form there is dyspnœa, cough, pulmonary oppression with slight fever and relief for the time being after the casts are expelled. There may be no suffering for intervals of weeks or even years. A compensatory emphysema develops.

The physical signs are largely those of acute bronchitis but may differ in being localized. Over the region involved there are fremitus, diminished breathing and rales; one may hear the *bruit de drapeau.*

In the *diagnosis* we differentiate from the bronchial casts found in chronic heart disease, tuberculosis, pneumonia, hemoptysis, diphtheria and actinomycosis; the history of the disease is also distinctive.

The *treatment* is as in acute and chronic bronchitis. Atomized lime water or ether or steam is inhaled to loosen casts. Expectorants, emetics, tonics, are in order. Pilocarpin (gr. $\frac{1}{8}$-$\frac{1}{4}$) is a useful drug, if the depressive effects are forestalled.

Bronchial and Tracheal Stenosis.—Bronchial stenosis is a narrowing of the bronchial lumen. The causation may be from within through constriction by foreign bodies, new growths, inflammatory exudates, cicatrices of healed ulcers (generally syphilitic or tubercular) or (in the smaller tubes) by swelling of the mucosa; or from without the bronchi, through compression by enlargements involving the thoracic organs, such as aneurisms, echinococcus, solid tumors, malignant growths, enlarged glands, thoracic abscesses, extensive pleural effusion.

The symptoms will be in proportion to the size of the bronchi and the degree of the stenosis. There is pain and dyspnœa; cough and expectoration may be present, as also moderate fever.

The physical signs. There are deficient respiratory movements on the affected side. The bronchial fremitus may be diminished as also the breathing. The voice may indicate laryngeal involvement.

In the *diagnosis* we consider affections antecedent to the bronchial stenosis. We eliminate laryngeal or tracheal stenosis by the laryngoscope. The prognosis is unfavorable. We treat the cause; we remove, if possible, foreign bodies. Emetics may here be of assistance. We may be able to dilate by means of bovgies, tubes and the like.

Tracheal Stenosis is fortunately rare; the history resembles that of bronchial stenosis. It may be caused by goitre, thoracic aneurism, new growths or foreign bodies in the trachea. There is difficulty in respiration —dyspnœa and epigastric retraction. There are paroxysms of stridulous breathing, loud wheezing over the constricted area, with mucoid or blood-stained sputum, cough, retrosternal or substernal pain, soreness and oppression.

Poisoning in the Industries.—The first symptoms experienced by workers in occupations where injurious chemicals are used are referred to the nervous system. The diagnosis is difficult by reason of the similarity between the effects of certain chronic intoxications and infectious diseases, the great variability in the reaction of different individuals to the same poison, and by the difficulty of discerning the poisons at fault (which may be used in the industry for only a brief period or under a fancy name). Lead is employed in some fifty different industries, many young women work with it without knowing that they are having anything to do with lead—as in making or packing stiffened tissues, laces, fringes, bottle stoppers, paints for china, papers, varnishes, cements and repairs for electrical apparatus. Carbon monoxide poisoning from portable steam engines occurs to workers in tunnels, and to others from salamanders used in drying new plaster. The escape of water gas into a factory room causes severe headaches and vomiting, with speedy recovery in some cases, but in others with the development of weakness in the legs, and total amnesia-symptoms not subsiding for weeks. In 45 cases of severe carbon monoxid

poisoning in which the patients survived, the majority presented tardy symptoms. Anilin and nitrobenzol is used in the manufacture of washing powders, hair oil, shoe blacking and various essential oils; such substances are especially dangerous in these circumstances, as they are used under fancy and various names as perfumes and essences, so that their poisonous nature is not suspected. In two cases death was directly traceable to the nitrobenzol used in making a washing powder or shoe blacking; and in a third case a child had bloody urine the day after some shoe dressing had been applied to the bare feet. The less saturated the substance the greater the tendency to chronic disturbances, both local and general; benzin, for instance, has a less toxic action than benzol, and the toxic action increases in allge alcohol, acrolein, etc. Thus the acute intoxications often display peculiar features, due more to the special physical properties of the chemical; the chronic intoxications are more the result of the chemical properties than of the physical. Most industrial poisonous substances are fatal only with relatively large doses; but they induce special and often typical symptoms, especially as the part of the nervous system, when the organism is long subjected to their influence.

Tuberculosis and Re-employment.—The employment of those who have recovered from tuberculosis often furnishes a more difficult problem than their treatment. The occupation which was followed before the onset of the disease has frequently been unhealthful; and to return to it means to court a relapse whilst the pecuniary loss in learning a new trade may be more than the patient can stand. Many London representatives of hospitals for consumptives of sanatoria and of health societies met recently to discuss the after-care and employment of consumptives discharged from sanatoria. Dr. Jane Walker, a sanatorium expert, considered that the best trade for a discharged tuberculous patient was in general his old one; for thereby most money could be made and anxiety (that potent factor in consumption) was minimized. Indeed, an unsuitable occupation with plenty of money coming in was better than an ideal one with very little coming in. However well a patient might be on leaving a sanatorium, he wanted careful watching for two years after leaving.

If he had no work and his food was insufficient, he was pretty sure to lose ground. No patient should be discharged from a sanatorium unless he has a friend who would temporarily house him. Dr. Burton Fanning's analysis of the after-histories of 306 mild cases showed that 60 per cent. returned to their former work; 30 per cent. to new work; and only 8 per cent. could find no work. Of those who went to out-door work 76 per cent. kept well, 12 per cent. fairly well, and 10 per cent. kept worse. Of those who took up indoor work 73 per cent. were in good health, 11 per cent. were fairly well, and 15 per cent. became worse. There was thus little difference between outdoor and indoor employments.

Associated Physicians of Long Island.—The immense influence for good which can be and is exerted by an association of physicians offers itself to the medical men of Long Island in this society of some five hundred practitioners. The natural advantages of Long Island, situated as it is upon the face of the sea and enjoying a mild and equable climate, will suggest sooner or later vast health resorts and climatologic treatment. The incidence of disease in Long Island remains to be worked out. Among visitors and visiting invalids much that is distinctly extraneous will appear. On the other hand, among natives, a singular freedom from much of the commoner ailments may be noticed. Just what of the serious diseases will be best treated by the sea-coast and equable climate here remains for study, but cardiac diseases are surely to be benefitted at sea-level, on account of the atmospheric pressure. Renal disease will do well, unless blood pressure is too high. Tuberculosis is very favorably affected, if régime is correct and rigidly adhered to. The cutaneous diseases which are helped by ocean-bathing will be aided. Rheumatism can be given dietetic treatment, because the garden and farm produce available in Long Island is widely varied and plentiful. Nervous cases will have to determine the character of soil and surroundings, but there is lake and river and sea-side, hill and dale and coast. The provincialism of many of the districts and the aloofness of natives may constitute a drawback as well as a charm, but with the development of many sections and the facilitation of transit, the friendliness of well-wishers and the talents of all elements are combined to render Long Island a singular desirable residence. There remains still to establish libraries and music, lectures and social organiations.

Toward these objectives, moving spirits are now engaged in active work. The physicians of Long Island are progressive, as their clients are often derived from intelligent and forceful temperaments. It may be that the open country will attract those who finance sanitoriums. No better situation for hospitals and convalescent homes could be suggested. The bracing air and general accessibility are salient.

Illustrations of the Advantage of Psychometric Methods in Diagnosis, Prognosis and Treatment of Cerebral Disorders.—Three cases of chronic meningoencephalitis in its earliest stage are used to illustrate the author's thesis. (International Clinics, 1909, Vol. 11. By Tom. A. Williams, M. B. C. M., Edin. Washington, D. C.) In the first and third abnormalities of the reflexes and the sensibility helped the diagnosis: but in the second case, a quantitative examination of the psychic functions was the chief consideration.

The tests used were the memory, shown by the recognition of lines, position, portraits, and the arrangements of letters and figures devised by Winch; calculation, most reliance being placed upon the continuous subtraction of seven from a hundred. Perception and insight were tested by a series of pictures of impossible conjunctions, etc.

In the last two cases, the standard of automatic memory was almost normal. Indeed, in the second case both perception and insight were quite clear as well. But to the hesitancy and difficulty in calculation was added the inaccuracy as measured by quantitative tests. The reasoned measured improvement of this under mercurial treatment was valuable in prognosis.

The second and third cases were energetically treated, and are now at work after two years, and eighteen months respectively. The first case refused treatment,

and had gone from bad to worse when last heard from.

The psychometric method aids in eliminating the personal equation of the examiner, and improves the comparability of the data of different observers. For the examiner, it increases the surety of the diagnosis and affords an index to prognosis in relation to treatment. The author has confined himself to simple tests without apparatus chosen for clinical availability.

Rational Treatment of Tabes Dorsalis in Relation to Its Pathogenesis.—Dr. Tom A. Williams, of Washington (Medical Record, April 10, 1909), deplores the pessimism of American physicians as to radically arresting the process which is the source of locomotor ataxia. He shows that this is really a syphilitic affection depending upon a granulomatous inflammation of the spinal roots, as Nageotte found in 1894, and that the degeneration of the posterior columns is secondary to this and not a primitive dystrophy. The evidence for this is shown at length in American Journal of Medical Sciences, 1908, August, also March, 1910, and Medical Record, February, 1910.

It should follow that anti-syphilitic remedies should succeed in this disease. Williams points out why they have not done so formerly: too great reliance has been placed upon iodides. Continental Therapeutics have long established that mercury is much more efficacious. It is, however, practically impossible to obtain a sufficient and curable effect by oral administration without interfering with nutrition, which is even more important than the drug. Williams prefers intramuscular injection to inunction because of the inconvenience and uncertainty of the latter. When the soluble preparations are used, the injections are almost painless. The insoluble preparations, hewover, possess the advantage of slow absorption and longer intervals between doses, once a week sufficing. If the emulsion is carefully made, then the after-pain is tolerable to most patients.

The author emphasizes the importance of a regulated dietary and exercise. He shows the fallaciousness of expecting restoration of sclerosed tissues; but he urges the importance of the early diagnosis made possible by improved neurological technique, the elements of which are indicated in his articles in the Archives of Diagnosis and International Clinics of July 1909. See also April, 1910.

Acute Anterior Poliomyelitis in Adult.—This condition occurs, and attacks are ushered in by evidences of acute general infection, with sharp pains, and a temperature of 39° to 40° C. In a few days we observe the presence of paralysis; it strikes suddenly a great number of muscles, is of the flaccid variety, and the tendon reflexes are abolished. Sensory disturbances are not common, aside from the sharp pains. A period of retrogression, during which many muscles recover their function, while the earliest groups affected remain paralyzed, and after this atrophy may occur. Death may reach the patient during the acute infectious period, or by extension, at any time, to the diaphragm. Treatment is at first "hydrique," and then "lacto-hydrique," i. e., plenty of water; and then plenty of milk, and water. Blisters and blood scarification along spinal axis, or leeches so applied are recommended; and counter-irritation should be thorough. Some area must be left clear for the application of ice-bags, if the pain increases. Sixty centigrams of calomel ought to initiate treatment. Ergotine and hydrobromate of quinine with extract of belladonna may be given in pill for ten days. When the inflammation is quite relieved, order strychnine and brucine. For tonic effect add the glycerophosphates and some suitable preparation of arsenic. After six weeks of this stimulating regime, some electrical therapy may be instituted. Electrotherapeutic indications are: weak continued currents of from 5 to 12 milliamperes, along the spinal axis according to Huet, and continued currents upon the muscles and the peripheral nerve tracts, with the positive pole upon the spine. It is also well to use the weak induced currents with slow intermittences, which are tonic and trophic. The X-ray, which give service in multiple sclerosis and syringomyelia, may be employed, but with caution. It seems that the early use of electricity or the Roentgen-ray may re-light disease focuses.

Journal des Practiciens, 19 November, 1910.

"606."—Jeanselme and Touraine report upon 36 patients given the Ehrlich preparation. The Wassermann reaction is affected, but a few notable exceptions. Louis Martin and Henri Darré report to the Société Médicale des Hôpitaux a new method of preparation of the arseno-benzol compound. They follow the Baccelli intra-venous method of treatment (see Journal des Practiciens, 12 November, 1910). This intra-venous route is preferable because by it the treponema pallidum syphildis cannot become arsenico-resistant, and we spare the patient the local muscular reaction which may prove painful.

The arseno-benzol is dissolved in a concentrated soda solution, diluted later with a seven-tenths physiologic salt solution, so that the result equals one centigram of arseno-benzol in three cubic centimeters of liquid. Add enough acetic acid to reduce the alkalinity as far as possible until limpid, clear and lightly alkaline. Filter. Use 40 centigrams for a male, and 30 centigrams for a female patient.

Georges Guillan and Leon Bernard give two cases unfavorably affected by the use of "606." Such instances will become frequent. In some cases, unsuitable selection will be the reason.

It will be proper to await the most careful tests of diony-diamido-arseno-benzol. But the observations on darkfield and serum reactions promise great things for Ehrlich's remedy. Schaudinn's discovery of the treponema, Wassermann's perfection of the serum-test and Ehrlich's diony-diamido-arseno-benzol form a triumphant trilogy of scientific research. The invasion of bacteriologic and vaccine studies into the realm of therapy marks an era of immense significance.

Purpura of the Idiopathic Type.—A case is recorded by Hutinel in the Journal des Practiciens, 12 November, 1910. A child of sixteen months came into the hospital with a generalized eruption: red blotches and bloody. It was born at term after a normal gestation, breast-fed until 14 months. Fifteen days ago began with stringy stools and indigestion, which improved. Four days ago came the rash; some as ecchymoses, some as petechiæ. Epiphyseal swelling and some incurvation of the diaphyses: i. e., rachitic signs, the testicles enlarged, the spleen palpable, and the liver increased in volume, but soft. Some hepatic origin is discussed by Hutinel.

MISCELLANY

Enuresis in Boys.—A layer of collodion is applied at bedtime to the prepuce; before the boy goes to bed. This is done in such manner as to close the præputial orifice. Should the child wish to micturate, the seal can easily be removed with the finger.

Uterus Bicornis.—An instance is recorded. A woman of 29 years had two miscarriages. Rochard, Journal des Practiciens, 12 November, 1910, described the case before the Paris Surgical Society. Extra-uterine pregnancy was suspected.

Osteomalacia, Rickets and Paget's Disease.—Arcangeli of Rome (Progrès Médical, 19 November, 1910) says these three diseases are caused by one and the same infection. A specific diplococcus which lives in the bones of the patient. Arcangeli says that these are contagious morbid processes. Fontoynont says that rickets is unknown in Madagascar. Potier questions Marfan's and Baudouin's work.

Contagious Nature of Rickets. — Arcangeli of Rome, in Progrès Médical, Paris, 19 November, 1910, speaks of certain domiciles as infected with the specific diplococcus of osteomalacia. This same microorganism causes rickets and Paget's disease. So that the communicable nature of these affections is now asserted. The treatment by a Wright-vaccine has been tried, and Arcangeli says it is successful. The specific diplococcus is eliminated by the kidneys and may be recovered from the urine.

Ventilation in St. Petersburg.—One would judge from the observations of a traveller, that a hygienic propaganda is necessary in Russia: At the hotel in which he stopped he desired a bath; to this end it was necessary to assign him to an apartment of the royal suite. There were double sashes from top to bottom of each window; and on a sill between the sashes was a small mattress-like arrangement effectually blocking the passage of air. "Not only this, but the maid on her last round draws heavy damask curtains across each window. When I rebel and insist on having both shashes of at least one window wide open it is necessary to send for the house-carpenter, who clearly regards me as a lunatic."

Opium Sandwiches are stated to be the latest thing in San Francisco restaurant novelties. The price is one dollar to the initiated. This novel method of distributing the drug was revealed on the arrest of a Chinese "chop suey" proprietor. Had this gentleman not developed so lively a sandwich business in recent months he may not have been suspected; the police had their attention attracted by the mysterious behavior of some of his customers. A "sandwich" seized from one of the latter was found to be a bun with its centre hollowed out, the space being filled with a small package containing opium.

A Case of Sciatica.—Dr. T. W. Travell at the recent meeting of the Electrotherapeutic Association reported a case of sciatica which had resisted all forms of treatment along the usual lines in one of the large hospitals for three months. Treatment was begun with light, the static wave current, and static sparks on the third day after leaving the hospital, and all medication was stopped. The patient was able to sleep in bed after the third treatment and was entirely and permanently relieved of all pain after the seventh treatment, treatments being given daily.

The Duration of Pregnancy.—Dr. Ellice McDonald in the September number of the American Journal of Medical Sciences offers a method of calculation which will, no doubt, be useful in those cases when the last date of menstruation is not known. On the theory that the fundus uteri after the sixth month rises 3.5 cm. in the abdomen for each lunar month and at full term is just 35 cm. above the symphysis the author lays down the following rule: "The duration of pregnancy in lunar months is equal to the height of the uterus in centimeters divided by 3.5 cm." The measurement is taken with the patient lying on her back, the tape being allowed to follow the contour of the uterus from the symphysis to "the final dip" at the fundus.

Chorea in Children requires the following measures (J. Allan, Am. Jour. Med. Sc., Feb., 1910): Rest in bed for 3—4 weeks followed by a gradual resumption of activity. Isolation and protection against environment. Simple diet, starches and sugars being avoided. Hot packs or warm baths at night; cold baths or sprays for fever; massage. Aspirin, five grains in solution every four hours for a child of six; Allan considers arsenic in full doses as of some value. The heart requires careful consideration. Relapse must be guarded against. General tonic treatment is indicated during convalescence.

Diphtheria carriers are now presenting to preventive medicine the same difficult problem that typhoid and cholera carriers have for some years occasioned. Undoubtedly there are many cases in every community of persons having the Klebs-Loeffler bacillus in their throats, although they may never have had diphtheria; it were of course impossible to quarantine such people indefinitely. A recent case is that of a negro in Pontiac, Mich., whose throat yields constant Klebs-Loeffler cultures, though it is not known that he has ever had the disease; he has been isolated and his tonsils enucleated in an attempt to rid him of the infection.

A Notable Wedding Gift.—George Rowland, of Greenwich, Conn., and a Yale man, has arrived safely in Indian Harbor, N. F., in the 40 foot hospital tender Yale, built by him, the cost of construction having been raised by personal subscription. Rowland, with a crew of Yale students, took this craft from Booth Bay, Me., along some of the worst coast in the world and presented it to Dr. Grenfell, the Labrador missionary, as a wedding present, to be used in his Labrador work. The trip made by Rowland and his fellow-argonauts was a rough one of 1,600 miles, in most memorably bad weather. The Yale has an auxiliary engine using kerosene, as gasoline cannot be obtained in Labrador.

The Metric System is a subject of never-ending discussion in England. The London Nation prints the observation of a correspondent that the adoption of the metric units has been recommended by every Royal Commission which has considered it for more than fifty years. "Surely we need not wait another five years before we make a change so valuable that the cost and the trouble of making it would be forgotten in less than ten years after it was accomplished." The general substitution of the metric for the apothecaries' system would certainly be advantageous in medicine, both in England and in America.

MEDICINE AS A SCIENCE.

It Is Not the Agent, But the Reaction to an Agent Which Takes Place in Living Tissue that Must be the Guide in Scientific Medicine.

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HOW often do we hear the statement, "Medicine is not a science, but an art." Let us pause for a moment and note the difference if there be any between Science and Art.

Science is defined as: Knowledge gained and verified by exact observation and *correct thinking* especially as methodically formulated and arranged in a rational system.

Science in the wide sense includes first, science proper, embracing exact knowledge of facts; second, exact knowledge of laws obtained by correlating facts; third, exact knowledge of proximate and ultimate causes.

Art, on the other hand, means first, the combination or modification of things to adapt them to a given end; the employment of given means to effect a purpose. Second, skill and dexterity; an especial facility in performing any operation, intellectual or physical, acquired by experience or study. Third, *a system of rules for traditional methods* of facilitating the performance of certain actions; acquaintance with such rules or skill in applying them, as in any manual trade or handicraft, technical profession or accomplishment, as the art of building, of dancing, the practical or elegant arts; in this sense opposed to science, hence we speak of the healing art.

We notice at once that science and art while interdependent have little in common with each other and that science and art differ from each other principally because one is an operation of the mind, the other a practical application of rules and laws.

Science is the embodiment of *thought and reason,* art works by rule of thumb; the science of anything must be studied and acquired in the school and the laboratory, while art can be obtained as well by *observation and imitation.*

The question then presents itself: "Is medicine a science or an art?" The answer is: "It is just what we wish to make it." Though the day is not far distant when medicine will not be tolerated except as a science.

Unfortunately at the present time the medical curriculum is overcrowded and the time too short, yet the tendency is in the right direction, insistence upon the proper preliminary education; in fact, it would be well to increase the preliminary training and shorten the medical course.

It is not my intention to discuss here the problems of medical education except by this one remark. Every department in the medical college attempts to graduate professors instead of students. If the faculty would only bear in mind that the doctor is not made in the college, but that the doctor is a process of personal evolution and development of the properly prepared student after he leaves the class room. After a man has been in active practice for ten years or more he may begin to think of some special line of work to which by experience he finds himself best adapted; yet during his days in college he has or at least he is supposed to have mastered all the special branches.

It is truly said that the present tendency is toward specialism; yes, but what kind of specialism? More time should be spent in teaching the underlying principles, the student should be trained to reason from cause to effect. A student who is well grounded in the proximate and ultimate causes and effects as far as the human body is concerned will develop into a specialist if it is in him; if not, then he will make that which we are so sadly in need of to-day, a rational scientific physician, one who can think.

Medicine therefore as an art is not questioned, but what we need is medicine as a science.

The underlying principles of health and disease are as truly scientific as the underlying principle of geometry. Not a single phenomenon takes place in either health or disease that is not the result of some underlying cause; every particle of matter is correlated to other matter, atom is related to atom; there must be absolute correlation of all parts. Change one little atom in a grouping and the whole group undergoes a change, either for better or worse, but change it must. No science can change this underlying law, it is immutable and inexorable, for it was in the beginning, is now and always will be.

The study of these laws, the comprehension of these actions and reactions is the ground work of the science of medicine. It is not sufficient to know that the apple falls from the tree because of the law of gravitation. No, indeed, for the balloon rises for the same reason that the apple falls; both due to and in obedience to the same law, the same underlying principle, yet apparently opposite in their effects. The trained man behind the gun pulls the string and causes the target to be struck, he requires no science, no reasoning, no thought, he sights by rule of thumb, for frequently he does not even see the object he seeks to destroy; but some master mind, hidden safely somewhere, has calculated with mathematical precision the weight of the projectile, the explosive power of the powder, the resistance of the gun barrel, the necessary elevation, the damage intended, in other words, he understands the action and the reaction, he is scientific.

So it must be in medicine; we must know the action and the reaction of any measure we wish to employ. No matter how good the results of any certain treatment may be, we must if possible find out the reason for that good result, otherwise we are like the man behind the gun, we do the work and perhaps even get the results without knowing how or why. That is not scientific medicine, that is empiric, that is making an art of medicine. Let us bear in mind then, "*it is not the agent, but the reaction of living cells to an agent, that must guide us in the selection of our therapeutics.*"

To prove the soundness of this dictum, let me call your attention to the numberless cases on record where physicians from all the dominant schools have at some time or other treated a patient without any results whatever, yet that same patient fell into the hands of some "Christian Scientist," and frequently by that most mysterious force called "absent treatment," the patient, in a very short time seems to be restored to perfect health, much to the chagrin of the previously attending physician. Of course, you will say there never was anything the matter with him, then why did you not put him in the same condition in which he now is, it should have been easy.

If, therefore, that argument is brought forward, it simply strengthens my position, for since nothing was the matter with him, he should have been treated with nothing. The "Christian Science" was then the better "science."

Bear in mind, however, that "He who thinks he is sick, and is not, is sick indeed." In this particular patient there must have been some disturbance of his psychical functions and that agent which was capable of causing the proper kind of a psychical reaction, was the one indicated.

I do not mean to imply by this that I am an advocate of "Christian Science" but simply wish to illustrate the soundness of my dictum and call your attention to the underlying causes of this recovery.

Another patient who has gone the rounds, calls in an "Osteopath." This production of modern medical education at once finds some subluxation or malposition of one or more of the vertebræ, or some other bony portion of the anatomy. Every student of anatomy even during his first year must become astonished at the absurdity of this doctrine, for how many weary years has he spent in trying to remember all the various ligaments and muscles attached to line, protuberance or rough surface of each bone. In his second year when he comes to study dislocations and fractures, he begins to realize the enormous amount of force necessary to dislocate any bone, and later when he attempts to reduce dislocations, he finds that a complete anæsthetic is needed before it is undertaken and then frequently they remain unreduced.

Again, think back for a moment and see how many cases of anterior, posterior and lateral curvatures of the spine you can recall that apparently are enjoying the very best of health outsidle of their deformity; think of the average woman in tight fitting corsets, where every rib is forced out of its normal alignment, yet do they complain of anything? They certainly seem to suffer no ill consequences.

So after all it can hardly be the subluxation or the malposition of the osseous structure that is at fault. Still these patients get well under osteopathic manipulations, now why? All along the spinal column are distributed the ganglia of the sympathetic system; from these ganglia nerves are given off that control the circulation in the skin lying immediately over these ganglia. It is by or through the impression made upon these nerves that stimulating impulses are carried inward and through this stimulation some distant organ or tissue is influenced. If the proper kind of stimulation has been selected to create the right kind of a reaction, that patient will get better; if improperly treated or where this mode of therapeutic procedure did not call forth the right kind of a reaction then even the "osteopath" will meet with failure.

The next patient is a case of typhoid fever, let us see what happens to him, why he gets well and why he does not, but always bearing in mind that we are looking for the underlying principle, the science of medicine.

Agreed that typhoid fever is due to the invasion of the intestines by a certain kind of germ, taking up its habitat there and liberating toxins which cause constitutional manifestations, locally give rise to inflammation and possibly ulcerations with perforation of the intestines especially in the patches of Peyer and other glandular structures. Now what is the treatment that this patient receives, and upon what ground is he treated? The regular practitioner could not tear himself away from the favorite belief that some drug could be found that would annihilate the germ in situ, but after years of useless drugging, no drug seems to be available for that purpose.

At once a brisk cathartic is administered to the patient, which as far as the emptying of the bowel goes does no harm, then he administers intestinal antiseptics, the logic of which has never been quite clear to me. The septic material is not within the lumen of the intestine, it would be well if it were, then a simple clearing out of this region would put a stop to the constitutional manifestations of the toxic absorption, but the germs, as has been stated, are not in the lumen, but in the walls of the intestines. We are forced to assume then that the administration of the antiseptic theory either rests upon the belief that after absorption of the poison elaborated by the germs, it can be neutralized by the administration of some drug acting as an antitoxin; would that such were true!

The patient meanwhile undergoes a lot of treatment, depending upon into whose hands he has fallen. One doctor gives him nothing to eat at all, the next only the most nutritious diet; another only liquid, while another only dry diet. In the meantime the patient takes one of two chances, either he survives or he succumbs. Suppose this same patient fell into the hands of a brother of the homœopathic persuasion. This doctor takes the symptoms of the patient into consideration, either as they appear to the patient himself, who is liable to misconstrue any and all of his symptoms, or as the doctor thinks they are, or at least as he interprets them. In either case you have the personal equation to take into consideration. Having by some method grouped and arranged the symptoms the doctor is ready to select the indicated remedy; having decided upon the indicated remedy it depends whether he be a high potency or a low potency disciple, finally after all these preliminary questions have been satisfactorily disposed of the patient is treated according to the law of similia similibus curantur.

The Eclectic has a shade the best of it, when it comes to therapeutics: he says, as the word implies, "We choose the best of all the systems;" well if that is true he is like the Cuckoo; *lets others do the hatching.* In the journal of Therapeutics and Diathetics for the month of December, 1910, on pages 74-75 we read the following:

HOW TO PRESCRIBE INTELLIGENTLY, RAPIDLY AND SUCCESSFULLY.

The seeker after truth should know no "pathies" or "isms." He must be absolutely free from prejudice in pursuit of that knowledge of remedies which will help him to heal the sick.

In our own materia medica we may not find a clear-cut indication for the remedy we are studying, but in the work of another school of medicine we may find a definite indication for that remedy; so his position is unimpeachable, he selects the best of all the others, and more man certainly cannot do.

The "Osteopath" is wise, he says: "That is infectious or contagious, I'll have none of it, away with it.

The Hydropathist is liable to run the entire gamut, he is a therapeutic nihilist and disregards drugs entirely, and so depends upon his favorite method, from the actual ice tubbing, to mere sponging with lukewarm

water, cold sheet packings or the application of wet cloths or towels to become dry by the heat of the body and repeated as often as the fever seems to require it.

If perchance a "Christian Scientist" is called in, the patient is at once put right, for he is laboring under a delusion and there is really nothing the matter with him, he simply thinks there is and he is told "to forget it." And if a surgeon were called he no doubt would say "Cut it out."

But if all the above enumerated systems lose sight of the underlying principle, and treat by the rule of thumb, a perpetuation of traditional methods, then truly "Medicine is an art and not a science."

Is there then a scientific rationale in this as well as other diseases? There certainly must be, for the patients have recovered under all of them, and they have died under most of them.

Sir Astley Cooper once said: "Some patients get well with medicine, some without it but most of them in spite of it." One thing certainly does stand out most prominently, the mortality statistics were lowered in almost exact ratio as drugs were withdrawn. The regular had the highest, the eclectic next, then came the homœopath closely followed by the hydropath, especially when the Brandt system was used.

Osler (p. 209) "Typhoid Fever" states: "We have learned slowly that typhoid fever is not a disease to be treated by drugs" (p. 213). Hydrotherapy: "In some form this enters practically into every form of treatment . . . . with this form of treatment the mortality is lower than from any other, but if used, it should be done from the onset and carried out systematically. Brand insisted upon the importance of this.

Let us revert once more and see what the disease really is: An invasion of germs within the walls of the intestines forming there a toxin against which no drug has been discovered. Then why should we administer one?

It is stated that this toxic material is the cause of the high fever; that is really putting the cart before the horse; the fever is an attempt upon the part of the economy to manufacture or produce an antitoxin which will neutralize the effect of this toxic material. This extra work requires an extra effort or energy on the part of the system and hence this outward manifestation of the extra effort *the fever.*

Should then the fever be our main object of attack? Certainly not, for without it the economy cannot produce that which would eventually counteract the poison. I don't know of anything that can so dishearten the attending physician as a patient who is without fever or suddenly shows a subnormal temperature, but we can satisfy ourselves by calling it shock or collapse.

We have then only the local condition left, the effect within the walls of the intestines.

Can we administer anything that will destroy or dislodge these germs? So far we have not found it in the way of drugs at any rate; if we cannot destroy them what can we do?

There is only one logical thing to do and that is to assist nature, but we must not hinder her. I am not going to dwell upon proper hygiene for that is self evident, it is truly said "Cleaniiness is next to godliness."

The temperature has been agreed upon as vital, but there is a limit to even good things, for too much of a good thing is good for nothing. The temperature should be kept under control, say not higher than 102.5° F. The moment it reaches that point it must be held in check. By the administration of the coal tar derivatives? No, nor any other derivatives, but by either the application to the whole body of a thin sheet wrung out in water not colder than 100° F., for by the time it is applied to the body it has dropped to about 80° F. and a difference of more than 20° should never take place. If the patient is very robust and can be handled without discomfort, give him a full bath of never lower than 80° F., up to 90° F., for as long a time as the patient feels perfectly comfortable. The bowels should be moved once daily with a warm water enemata to which a little soap may be added. Outside of a simple diet nothing else is required; complications may, of course, arise here as elsewhere, but we are not considering complications until we can master the simple case.

Now you will begin to ask, and justly so, where does the science of this come in.

Before we can seriously consider that phase of our subject we must digress for just a moment. Virchow in his cellular pathology has shown conclusively that the whole body is but a conglomeration of individual cells; each cell performing its own function of and by itself, that all the cells represent a sort of social system, one cell always depending upon its neighboring cell and thereby maintaining a sort of equilibrium between all of them.

Each cell is just as much a perfect organism in a limited sense as the congregation of all of them into the complete body. The body at large breathes in oxygen and exhales carbon dioxide, so does the cell; the body takes up nutrient material and excretes waste, so does the cell; the body propagates its own species, so does the cell; the body is subject to health and disease, so is each cell; the most vital thing for the body is the continuous supply of oxygen, so it is with each cell. We see, therefore, that whatever is good for the body is also good for the cell, and whatever is bad for the cell is bad for the body. Since then the body is but a conglomeration of cells, let us attend to the individual cell and the body will be well looked after.

You remember the principal local lesion in the walls of the intestines; here we have local congested areas, which through anæmia or insufficient oxydation break down, thereby not only furnishing a good culture media but being in imminent danger of necrosis and so causing that much dreaded ulceration and perforation.

Is that not a confusing statement, inflammation, congestion, and anæmia? Not at all. When the dentist wishes to kill a nerve in a tooth, he places within the cavity arsenic and closes the same up. In a very few hours the tooth begins to ache, the inflammation is getting worse from the presence of the irritant, a little later every pulse beat can be felt within this tooth, there is now congestion, this congestion keeps on until it fills every possible space where red and especially white blood corpuscles can congregate. Now the circulation is completely stopped and the nerve dies in an anæmic state for the want of oxygen. Exactly the same thing, the very counterpart happens within the walls of the intestines especially the patches of Peyer. Now for the scientific treatment, what shall we do? If the above outline of the condition is true, and who doubts it, there is only one logical thing to do; we must

keep up the circulation in the walls of the intestines for the purpose of oxydation or just the opposite from the dentist and the tooth. How shall this be done? We may administer some drug either in large or infinitesimal doses, it matters not, so long as they irritate the lumen of the intestines and so keep up a better circulation and oxydation. But you will wonder what becomes of the drug after it has performed that office and may it not also irritate other parts to their detriment? Just so, in that point we find the explanation of the lowered mortality statistics in exact ratio as the amount of drugs administered.

No wonder that Osler says: "We have slowly learned that this is not a disease to be treated with drugs."

Is there any other way of keeping up the circulation in these lesions? Most assuredly, it is by the administration of the bath or the application of the wet cloths to the patient. The first effect of cold applied to a hot surface is capillary contraction with a forcing inward of all the blood contained within the peripheral vessels, then a reaction with an unloading of the central blood to the periphery. Again the application of the wet cloths or the full bath and again and again, for you remember, I said "as often as necessary" and it is necessary every time that the body temperature rises to 102.5° F. for that means that the system is being overwhelmed with the toxines because of insufficient oxydation and so the system makes this extra effort for the production of the needed antitoxine. If then the bath is used early and often the oxydation within the congested area will not suffer so much from the want of oxygen and we do not see that high temperature and the consequent delirium or that dreadful typhoid state. The fever, again, as has been pointed out, is merely an incident, so the man who treats the fever, and treats it well, merely treats the incident and saves his patient incidentally, but the doctor who treats the asphyxia in the lesion, treats the disease scientifically and makes medicine a science and not an art.

Careful nursing, perfect quiet and proper diet are indispensable, having these things you have the most scientific, the most logical treatment that can be had. Remember that I was not discussing the treatment of typhoid or any other disease in particular, for every disease can be reasoned out on similar lines, but my point was the science of medicine as compared to the art of medicine.

Bear in mind then my oft repeated dictum: "It is not the agent, but the reaction of living tissue to an agent, that must guide us in the selection of our therapeutics."

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Japan Also Generously Supplied.—There are about 40,000 doctors in Japan, who all employ European methods. The diseases of the country are the same as those of Europe, except dysentery, which rages with absolute regularity every summer. Hygienic methods are most skilfully applied. Many Japanese die of consumption, and that is why the north of Japan is not much populated, for the people endure the heat better than the cold, as is natural, considering their tropical Malay origin.

THE SCHOOL SYSTEM AND THE CHILD.*

BY A. L. BENEDICT, A.M., M.D., BUFFALO.

EVERY few months, somewhere in the great mass of popular, sociologic or medical literature, appears an article deploring the baneful effects of our system of education on the health of the rising generation. It would seem that these effects ought to show in the gradually diminishing health and vitality of our people, as we contrast groups of different ages, or as we compare one census with the preceding. On the contrary, as far as one can judge from the experience of old, middle-aged and young physicians, the general health of the country has improved, though this is largely due to sanitary inventions, and regulations with regard to infectious diseases. Still, the average length of life has increased seven years in a generation.

There has been no such sudden change of educational methods that we can draw a "before and after" comparison, neither has there been an adherence to identical conditions for a long period of years. The gradual changes make it difficult to say just what is modern and what is old, or to mark the beginning of banefulness. Still, the educational process is something that affects and has long affected most of our native population, during six, eight, ten or more years of their most susceptible period of life. Our laws have made it as nearly universal in its scope as possible; economic conditions have brought most children under the public school system; and, rightly or wrongly, different states and cities have mutually influenced one another so that the system is and has been much the same for all parts of the country, barring the inevitable differences according to density of population.

Unfortunately, few of us are skillful enough to suggest a method of combining the advantages of civilized sanitary methods and a somewhat guarded but schoolless state of nature for children. In the course of a few years there would be no one left to maintain the civilized safeguards.

Neither is it possible, under any economic condition that we are able to imagine, for more than a very small percentage of our children to be brought up by expert parents or tutors along the lines of nature study, with what we demand along formal educational lines worked in at odd moments or on stormy days, so as to interfere as little as possible with the outdoor, untrammeled life of the child and, by carefully studying the proclivities and weaknesses of the individual child to attain the utmost education from the least possible expenditure of time and effort. The great mass of our children must be educated by systematic class work, at definite times and, so to say, by wholesale.

The school work consumes about 900 of the 9,560 hours of a year. For the very young children, the time is about half as much. At the beginning of the period of full grammar school day's work, the child should sleep nearly if not quite twelve hours a day, later the sleep is gradually reduced to ten or even nine hours. Meanwhile, the amount of study expected at home is gradually increased but, on the average, even for the school days, Monday to Friday, the average child has six or seven hours of the waking period free from educational business. Of course, there are teachers who give out unreasonably long lessons, who discipline by tasks which do the child more lasting

*Read at the 35th annual meeting of the American Academy of Medicine, St. Louis, June 4, 1910.

damage than corporal punishment and who make the work disagreeable and nerve-wearing. These exemplify an inevitable defect in any human organization but are, themselves, amenable to discipline. Taking the general average, it does not seem that our educational system can be considered unreasonable as to its hours of labor.

Is this great industry of getting an education carried on under proper hygienic conditions? There are no available statistics on this question and, if there were, they would merely consist of a tabulation of opinions on individual institutions. We can all remember sanitary defects of our own school houses and many buildings remain that are badly constructed. Speaking broadly, however, our school houses, with regard to lighting, ventilation, cleanliness, toilet facilities, etc., rank well as compared with our stores, work shops, churches and other public meeting places and even our homes. In many small towns, the "Union School" is almost the only building which illustrates the refinements of modern architecture, in the practical sense, and in many city districts, the children are more comfortable and under better sanitary conditions at school than at home. More than this, there is a regretably large part of the population whose only education in personal hygiene, including ordinary cleanliness, emanates from the school. In not a few instances, children have sought by all sorts of ways, even including infractions of discipline, to remain at school after closing hours for the sake of being warm and free from ill treatment.

Is the child's schooling adapted to his eventual practical needs and to his present capabilities? Obviously, the school, in the ordinary sense, does not and should not attempt to train the child for a definite industry. We may roughly group the grammar school studies into three classes: 1. Studies universally considered necessary, including the "three R's," geography, spelling and probably grammar. 2. Calisthenics, music, drawing, nature study, manual training, etc., as well as practically all of the work of the kindergarten. 3. Physiology, history, algebra, language study, etc.

The second group apply to the general physical, artistic and cultural training of the child. They may very properly be considered invasions of the province of the parents, special teachers, and even of the child's spontaneous recreation. They rather tend to rest and divert after the more wearying studies of the first group. Granted that the child has a good home, including a play room and work shop, intelligent and interested parents who will help him develop mechanic ingenuity and skill, draw out whatever artistic talents he may possess and look after his health, he does not need this sort of training in school. Unfortunately, especially in the larger cities, we have an increasingly large population that can not or will not thus provide for the child's needs. If he does not get this sort of help at school, he will miss it altogether. How best to dispense this paternal kindness, how to distinguish between the children who do and who do not need it, in other words, how far it should be included in the regular curriculum and how far it should be carried on at separate institutions and at different hours from those of the regular sessions, are problems that would require time and expert skill beyond the limits of the present article and its writer.

The third group of studies virtually belong to the high school. They have crept into the advanced grammar grades largely because of the impossibility of enlarging the high school buildings and their teaching staffs sufficiently rapidly, under existing political conditions, to meet the popular demand for something more than the old-fashioned grammar school course and because the great majority of pupils who make this demand upon the school system do not continue throughout the succeeding grades of the older high school course. Practically, a distinction is made between some of these studies which really shorten the high school course proper and others which are more specifically intended to broaden the grammar school course itself. The latter kind of studies are often criticized as fads, which divert the pupil from essentials and in many instances this criticism has undoubtedly been deserved. Unfortunately, in trying to advance we must always experiment more or less on the human being, whether in medicine, law, sociology or education. We cannot stand still, we cannot unerringly tell how our good intentions will work out in practice. Sometimes the study itself has been shown to be useless; sometimes, the general subject is good but the method objectionable, as for instance when in the attempt to teach the average child of thirteen to fifteen something about the principles of healthful living, we have disturbed his dreams with mutilated animals and fanatic exaggerations of the action of alcohol.

Too often the utility of a subject and the ability of the child to grasp it, are settled off-hand by a very superficial argument. "Pa" is asked to help with an example in square root. Being rusty on that phase of arithmetic, he is unable to make the extraction and, anyhow, he has not used square roots in his business. Therefore he concludes that if he, a grown man, finds the sum too hard, it is proportionately difficult for his boy and condemns its inclusion in the course as an example of useless cruelty. Complaints along this general line are numerous. Such complaints, however, depend upon two fallacies. No one expects that every detail of the school course is to be remembered and used in later life, by every student. It would be as sensible to criticize a rowing machine at a gymnasium because it failed to bring one to some destination. Much of the school course is intentionally a sort of mental gymnastics. Again, a problem too hard for extemporaneous solution by an adult may represent a perfectly reasonable effort by a child who has been led up to it one step at a time.

To what extent may the reputed ill effects of our school system be ascribed to other causes? In our larger cities, teachers find fairly numerous instances of children whose health is undermined by insufficiency of food and clothing or by overwork out of school. Still more frequently, the children of parents in good circumstances make their breakfast of little else than coffee and are almost equally underfed or inadequately clothed because of the indifference of their parents. A considerable proportion of the task work inflicted as a matter of discipline falls upon children as vicarious victims for their parents' fault. The latter are too lazy to have breakfast early enough for the children to get to school on time, too careless to arrange for luncheon to conform to the afternoon schedule, they do not send the children to bed at an early enough hour, in a negative or positive way, they encourage the children to regard the matter of their education with indifference

and to hold the school discipline in contempt. Inevitably, the punishment falls upon the children. The inculcation of habits of promptness, industry and obedience to proper authority is a very important part of the teachers' duty. The best interests of the greatest numbers demand that infraction of discipline shall be punished.

So much has been written on the social dissipation of school children that it is unnecessary to dwell upon this evil. On the whole, it seems to have been exaggerated. But many parents fail to realize that getting an education is a serious business for which the mind and body of the child should be vigorous and in preparation for which the child should conserve his energies just as much as any adult who is in business.

Many parents seem to regard the elementary grades of the grammar school as a sort of creche and lie about their babies' ages to get them admitted before the law allows; while, on the other hand, they regard the higher grades as encroaching on the hours of more or less directly gainful labor which the child can perform for the support of the family. All children ought to have some responsibility in the home and poverty often renders it necessary for them to perform domestic duties or to engage in some sort of paid labor outside of school hours. But, generally speaking, it should be recognized that no man has a right to bring children into the world unless they can be supported until a reasonable degree of education has been secured and, either in a punitive or philanthropic spirit, according to circumstances, the law should interfere to prevent placing on the immature shoulders of the child the double burden of an education and of performing anything like self-supporting labor.

A specious argument against our public schools is that they place all children on the same plane and establish a rate of progress which some are unable to maintain without serious injury. If we pause to reflect, we shall see that this establishment of an average requirement is inevitable in civilized society, where large numbers of individuals come into close contact. It pertains in all industries, in social and moral life and applies to persons of all ages. We may well ask, however, whether in larger cities, at any rate, it would not be feasible to establish three rates of progress for the grammar schools so as to provide not only for the average but for children of good heredity and home surroundings which confer a good deal of education in an indirect way and also for children whose heredity and home influences or personal defects hamper their intellectual development. Still, the massing together of children of all degrees of mental ability and making them conform to a single standard is in accordance with democratic ideals.

As a matter of fact, the great majority of healthy children, whatever their heredity and home surroundings, can and do adhere to the single standard of our educational system without injury, although it is commonly observed that the amount of effort expended by individuals in so doing varies considerably. To a large degree, the backwardness of certain pupils—excluding, of course, the actually feeble-minded, who require training in special asylums—is due to undiscovered physical handicaps. By placing slightly deaf pupils in front seats, by fitting lenses to near-sighted and astigmatic eyes, by clearing out throats whose unfortunate possessors are unable to think clearly because they are virtually in a state of chronic asphyxiation, by attending to various other purely physical conditions, a large percentage of the children who are apparently being injured by the effort to keep up with the average standards, are shown to be perfectly able to do so.

Finally, what is the verdict of the pupils themselves? So far as one can judge by ordinary observation, the average boy or girl enjoys his or her work at school, not perhaps as acutely as a game or social event, but in the same sense that a normal adult enjoys his business. In these days, at least, the teacher is usually regarded as a friend and the school is a center of social and intellectual life for the child. There are exceptions, due to the impossibility of carrying out details with perfection in any system which involves human instruments but they are not the fault of the system and the modern development of an esprit de corps and of a serious study of pedagogy by teachers, is rendering the exceptions more and more infrequent. In many of our states—and by no means eastern states alone—more than ten per cent. of the population of corresponding age, complete the high school course while, in some cities, half of the graduates of the grammar school at least make a good start on the high school course. No law compels them to do so and, in many instances the initiative is taken by the child himself, the parents being lukewarm or antagonistic. It is hard to believe that the increasing demand for high school instruction—this increase being double, sometimes quintuple the increase in population for a given locality—could exist if our system of grammar school education were either physically injurious, essentially cruel or inconsistent with the real needs of the people. If it failed signally in any one of these vital points, parents and children alike would welcome the release from school at as early an age as possible.

A STUDY OF LOBAR PNEUMONIA.*

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THE subject of pneumonia, despite its triteness and its repeated discussion before medical bodies, must remain of perennial interest to all practitioners of medicine, and this not only on account of the gravity and high mortality of the disease, but also because of the significant fact that pneumonia, already a distressingly frequent disease, seems to be, especially in the United States, constantly and alarmingly on the increase.

An examination of a large number of statistics from hospitals in all parts of Europe and America, from cities as widely separated as Glasgow and Vienna, Chicago and Philadelphia, graphically indicates this steadily increasing prevalence. In Chicago pneumonia deaths increased between 1860 and 1900, from 4½ to 20 per thousand. In 1890 in the United States pneumonia caused 9% of all deaths. By 1900 this figure had increased to 10½% of all deaths. We can therefore readily perceive the importance of a disease which occupies so large a portion of our field of duty.

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ETIOLOGY.

Before discussing the etiology in some detail, we may point out one important fact, which we are apt to overlook. In the light of modern knowledge, pneumonia must be considered a systemic infectious disease with special symptoms in the lungs, just as much as typhoid fever is a systemic disease, with special lesions in the intestines. This will explain how, in the presence of the predisposing factors, the causative agents, generally the pneumococcus of Fraenkel, will cause ordinarily an inflammation of the lungs, but frequently enough, inflammation of other organs and tissues as well, which, depending upon the particular circumstances of the case, may be regarded either as complications or as integral parts of the disease.

Predisposing Causes: There are, of course, certain conditions outside of the body which will predispose an individual to an attack of pneumonia. The presence of the pneumococcus alone is not sufficient, as this is frequently found in apparently healthy persons. Among such predisposing causes seasonal, and meteorological influences play an important part. About two-thirds of all cases occur between November and June. Secondly, exposure to cold may be mentioned, although it is easy to exaggerate the influence of this. Exposure is important in so far as anything which tends to lower the bodily resistance, makes the body an easy prey to the pneumococcus. It is certainly true, however, that when the heated and generally perspiring surface of the body is adequately chilled, pneumonia is very apt to supervene.

Defective sanitation is a contributing factor. Improper hygiene and ventilation and overcrowding predispose to infection, here as in everything else, so that pneumonia is much more prevalent in cities than in the country, although there is so much more outdoor work in the latter.

Acute Diseases: It is well known to all of you how prone pneumonia is to become a complication of certain acute diseases, notably influenza, where it is extremely frequent and fatal. There is likewise an undoubted though still not clearly understood relation between typhoid fever on the one hand and pneumonia on the other.

As far as chronic diseases are concerned, pneumonia is very apt to be a terminal infection in various of them, notably diabetes, nephritis and diseases of the circulatory system.

Sex: Pneumonia is about twice as frequent in adult males as in females, out of which many writers try to conjure a greater natural susceptibility on the part of the male. I am not at all impressed by this difference of figures, except as natural consequences of the much greater exposure to which men are laid open.

Age is an important factor, a majority of cases occurring in early adult life. Almost 60% occur between the ages of 10 and 40, and yet pneumonia is quite common at the extremes of life, in early infancy and in old age. Right here it may be well to state that contrary to the common belief, primary pneumonias in children over one or two years are more frequently lobar than broncho-pneumonias.

Alcoholism: There certainly seems to be an etiological factor in alcohol.

The *exciting cause* is generally the organism commonly known as the pneumococcus or diplococcus pneumoniæ of Fraenkel and Weichselbaum. Sometimes the pneumobacillus of Friedlander is found. The influenza bacillus of Pfeiffer and the typhoid bacillus may of course likewise cause pneumonia.

PATHOLOGY.

It is not my intention to go deeply into the pathology. We still distinguish, as Laennec was first to do, the stages of congestion, red hepatization and gray hepatization, and add to those the fourth stage of resolution. The first stage of congestion, or engorgement with blood, lasts about twenty-four hours, and gives the affected lung tissue a dark blue color. The second stage of red hepatization, giving the tissue a dark reddish color, lasts about two days and passes into the stage of gray hepatization, which gives the lung a grayish yellow color, and lasts about 4 to 5 days. These stages are of course not always quite distinct, and sometimes red and gray hepatization may be found side by side in different portions of the affected lobe.

SYMPTOMS.

The clinical picture presented by a typical case of pneumonia is so well known, some of its main features being familiar even to the laity, that it would be almost impertinent for me to say very much about it. But some of the symptoms are so important and interesting from the standpoint of diagnosis and differential diagnosis that I should like to pick them out and dwell upon them in more detail.

MODE OF ONSET.

After an incubation lasting from one to three days, and sometimes accompanied by various prodromal symptoms, such as malaise, headache, the disease is suddenly and abruptly ushered in. In about 80 or 90% of the cases, there is the characteristic initial chill, often well marked and severe, lasting one or more hours, the patient shivering with extreme cold, teeth chattering and lips blue. Nothing that is done can make him feel warm. Sometimes there may be only a number of slight chills, or simply chilly sensations. In children, instead of chills the onset may be with cerebral symptoms, often sufficiently marked to make us suspect meningitis, or with convulsions. The latter, however, are not nearly so common in the onset of pneumonia as in that of many other diseases in children.

The insidious invasion generally occurs in senile pneumonia, and the disease may be far advanced and the patient in a grave condition before any symptoms are observed.

Immediately after the onset, or even with it come various other symptoms such as dyspnœa, pain in the side, increase of temperature and pulse. The temperature rises rapidly to 103° or more. In children the temperature may be very high—106°—without by itself causing alarm. In senile pneumonia, it may be very slightly or not at all elevated. With the pyrexia goes a flushing of the cheeks, generally more marked on the affected side, and this has been considered a suggestive diagnostic point, but this test is not infallible: the flush may be absent, or more marked on the opposite side. The pulse rapidly goes up to 120-130. In children it may reach 160 or even 200. More significant than this is the rapid increase in the respiration, out of all proportion to the temperature and pulse. The normal "pulse-respiration ratio" is about 1 to 4. In pneumonia this ratio is rapidly changed to 1 to 3 or 1 to 2, or in children sometimes even 1 to 1. This alteration in the pulse-respiration ratio is exceedingly suggestive, es-

pecially in children, in whom it may greatly aid in the diagnosis.

Another diagnostic symptom is the "diagnostic grunt" in children.

Pain is a very constant symptom. It is generally in the side and often very intense. It is of course due to the accompanying pleurisy. When the pneumonia is a "central pneumonia," it may at first be absent or of little consequence. What I wish particularly to dwell upon however, is not the characteristic pleural pain, but the pain occurring elsewhere, especially in the abdomen, which has been the cause of many an error in diagnosis. Before physical signs in the chest are well developed, there may be such pronounced abdominal pain with consequent muscular rigidity that laparotomy has sometimes been performed for supposed appendicitis or other intra-abdominal conditions. Of course, nothing abnormal is found and several days after, typical symptoms of pneumonia present themselves. Our esteemed fellow member, Dr. Henry Roth, some years ago read a paper before this Society on "Conditions Simulating Appendicitis," in which he mentions a number of such cases, some of which I had the privilege of seeing. The explanation of this abdominal pain is that it is due to a diaphragmatic pleurisy, and as the lower six intercostal nerves supply the abdominal wall as well as the diaphragmatic pleura, the pain may be referred to the ultimate distribution of these nerves in the abdomen.

Earache is a fairly frequent symptom especially in children, in whom the ear symptoms may at first overshadow all others.

The dyspnœa, the rapid shallow breathing, is often a distressing feature. The patient breathes superficially to avoid the pain of deep respirations. But, dyspnœa may also be due to a complicating cardiac insufficiency.

Cough is a fairly constant and troublesome symptom, although in young children it may be absent. It may be continuous or paroxysmal.

The sputum is at first scanty and viscid, but soon assumes the appearance so characteristic of pneumonia, the so-called "rusty sputum," reddish brown in color, very stringy, often streaked with blood, but seldom containing much blood. It is frequently said that there is no sputum in children, but this is because children do not expectorate the sputum, but swallow it.

The temperature curve is characteristic, although not diagnostic. It rapidly rises to a high point, and is then continuous, the diurnal variation seldom exceeding one to two degrees F. In ordinary cases it continues for from five to nine days, and the defervescence occurs by crisis, the normal temperature being reached within 24 hours or less. It is a curious fact that this crisis generally comes on the odd days, generally the fifth, seventh and ninth, but the preponderance is not so great as supposed. About 70% of the cases have the crisis before the ninth day. I recently saw a case in a young child where the crisis occurred on the twenty-second day. Perhaps one-quarter of the cases end by lysis. That is, there is a gradual return to the normal temperature extending over some days, even a week or more.

Of the pulse I have already said something. Generally speaking, the pulse keeps step with the temperature, becoming slower or faster as the latter is higher or lower. A "pneumonic pulse" is generally quite characteristic. It is a full bounding pulse, regular, and of normal tension, and will remain so, unless complications occur in the circulatory system.

Blood: The blood changes in pneumonias are of some importance. There is, first, the very considerable fibrin formation as a consequence of the disease. The hæmoglobin is decreased, but of course the most interesting change is that in the white corpuscles. A leucocytosis is found in practically all cases. This varies in degree, but 20,000 is about the average. The degree of leucocytosis is directly proportional to the amount of resistance offered by the body to the infection, and a moderately high leucocytosis shows an increased resistance to the pneumococcus. It may not be generally known that pneumococci are found in the circulating blood with very great frequency.

The urine shows the ordinary febrile changes—albuminuria, high specific gravity, etc. The most significant change is the diminution or total absence of chlorides, which would be a helpful diagnostic feature if this test were resorted to oftener than it is.

A skin manifestation really valuable in pneumonia, in my opinion, is herpes. This is extremely common, but as it may occur anywhere over the body, it is probably often not recognized, and its occurrence therefore considered more infrequent than is really the fact. It appears most comomnly upon the lips, at the angles of the mouth or alæ of the nose, or just within the nose. There may be only a very few vesicles, which of course may be easily overlooked. Herpes is common in only three diseases, pneumonia, malaria and cerebro-spinal meningitis. To my mind, if herpes is present, and there are any symptoms of febrile disease to suggest pneumonia, the diagnosis may be considered in a fair way of being established.

Of the nervous symptoms I do not care to say much except to repeat here that convulsions are less frequent in the pneumonia of children than in other infectious diseases. However, I ought to mention the symptom complex called "Meningismus" which occurs not seldom in children, where rigidity of the neck, vomiting, delirium, or convulsions may at first suggest a meningitis. Otherwise the only important cerebral derangements are insomnia and delirium, for the latter of which alcoholism is the chief predisposing factor.

PHYSICAL SIGNS.

No matter how strongly the objective and subjective symptoms point in that direction, no diagnosis of pneumonia should be considered absolutely established unless there are physical signs of the disease in the lungs, which should be carefully and separately examined to that end. The physical signs of pneumonia are of course, matters of common knowledge to every physician.

Percussion. On percussion there is in the early stages a hyper-resonance, sometimes even a tympany on the affected side. When the stage of congestion is passed, this changes to a dullness indicating infiltration of the lungs. Where the consolidation is very extensive this dullness may amount almost to flatness, although we are accustomed to associating this sound with pleural exudate. The area of dullness corresponds approximately with the location of one or more lobes.

Auscultation. One of the earliest auscultatory signs are the crepitant rales, very fine high pitched sounds, (which have been most aptly compared to sounds like

hair rubbed between the fingers close to the ear), heard only during inspiration. These disappear when the lungs are filled with exudate, and reappear when the exudate becomes absorbed.

Breath sounds are at first harsh, but when the alveoli are filled, have the characteristic quality known as bronchial. The sounds are loud, seem quite close to the ear, and are heard both during both inspiration and respiration. The same conditions, i. e., filling up of the alveoli, produce the concomitant sign of bronchial voice. There is likewise increased vocal fremitus.

HEART.

I have reserved for this place mention of an important phenomenon occurring in the heart, accentuation of the second pulmonic sound. This sound remains accentuated as long as the right heart works properly. It is therefore a valuable prognostic point. Systolic murmurs may be present.

COMPLICATIONS.

The commonest is pleurisy, although as a fresh pleurisy accompanies practically every case of lobar pneumonia, it is doubtful whether it should not be regarded as an integral part of the disease. This refers only to dry pleurisy. Pleurisy with effusion is a real complication, most common in adults, while it generally takes the form of empyema in children.

Pericarditis and endocarditis are of more frequent occurrence than commonly supposed, as is likewise meningitis.

Nephritis is a disastrous complication. It may occur during the pneumonia or precede or follow it. Jaundice occurs in one or two per cent. of the cases (some give much higher figures), while arthritis is said to occur with about the same frequency.

Otitis media is a common complication, especially in children, when it must be looked upon with apprehension from possible extension to the meninges or on account of subsequent interference with hearing. Another complication that I consider not infrequent is parotitis, which may become suppurative.

It might be well to point out that most of the true complications of pneumonia are really only manifestations of pneumococcus infection outside of the lungs, while pneumonia may still be a complication of almost any of the infectious diseases.

Delayed resolution must be looked upon as a complication. There are, as we all know, cases where the temperature may go down, but physical signs persist in the lungs even for weeks, and yet complete resolution finally take place. But some of these cases may go on to organization of lung tissue, making the affected area unavailable for purposes of respiration. Of course, in all cases of delayed resolution, we must think of a possible development of a tuberculosis.

DIAGNOSIS.

The diagnosis of a typical case of pneumonia is attended with no difficulties, but atypical and irregular cases may not be so easy to distinguish from other pulmonary conditions, such as acute tuberculosis, pleural effusions, and particularly in children, broncho-pneumonia. Pneumonia may be likewise confounded with various other acute infectious diseases, such as influenza, malaria, etc. The early stages of meningitis and typhoid fever may be mistaken for pneumonia. I have already dwelt upon the possibility of error when there is abdominal pain in pneumonia. In cases of central pneumonia, both the characteristic symptoms and physical signs may be deferred until the pneumonia reaches the surface, so that for a few days the diagnosis may be in doubt.

However, ordinarily a careful study of the clinical signs and symptoms will help us to arrive at a diagnosis. Until the physical signs do appear we cannot consider the matter as certain. But where a disease begins very suddenly, with more or less marked chill, with fairly high temperature, rapid pulse, pain in the chest, cough, dyspnœa, rusty sputum or herpes, and especially if the pulse-respiration ratio is much altered, a pneumonia should strongly suggest itself. When physical signs present themselves, dullness, crepitant rales, bronchial voice and breathing, the diagnosis is fairly established. Where the onset and temperature curve are atypical, as is especially true in old patients and alcoholics, we can depend only on the physical signs in the chest.

Symptoms of compression from pleural exudate, especially where the bronchus is blocked up, are often so similar to those of pneumonia that the diagnosis may be impossible until the aspirating needle is used and serum or pus obtained.

Careful attention will generally enable us to diagnose the complications as they occur, by their own characteristic signs.

PROGNOSIS.

This is certainly not the least topic for discussion in importance. A good many elements enter into the prognosis of a case of pneumonia. The situation and extent of the lesion, the age and habits of life of the patient, the temperature, the pulse, and heart action, the nature of the complications present, the duration of the disease must all be considered. In the first place it must be borne in mind that pneumonia is at best an extremely fatal disease, most statistics showing a mortality rate of from 20 to 25%, an appalling figure. Yet this applies mainly to adults, as the prognosis of lobar pneumonia in children (not broncho-pneumonia, which is much more fatal) over one year old is very good, and in adults the rate is greatly raised by the frequency of a lethal outcome in the aged, and in sufferers from chronic diseases, especially of endocarditis, nephritis, and diabetes, when, as I have previously stated, pneumonia often acts as a terminal infection.

As is to be expected, the larger the amount of lung tissue involved, the higher the mortality, so that death is very frequent in pneumonias involving more than one lobe or lung.

Temperature: With regard to this, I want to point out that the extremes of temperature are what give us the greatest anxiety as to outcome. Very low, rarely even subnormal temperatures are found in pneumonias of the aged and debilitated and this class of cases shows an alarming death rate, whereas very high temperature often indicates a powerful toxæmia, with like fatal results. Children can endure relatively higher temperatures.

Pulse: A persistently very rapid pulse in an adult, say about 130 or 140, is in itself alarming and where the pulse is irregular or shows other evidence of inadequate heart action, especially if early in the disease, the prognosis is very grave. As for the heart itself, any evidence of interference with its mechanism should put us on our guard, e. g., the disappearance of accentuation in the second pulmonic sound is of ill omen.

The prognosis in cases complicated by various diseases is very serious, e. g., a fatal result may be expected in the presence of an acute enocarditis or pericarditis, nephritis, or meningitis. Pleurisy with effusion, and still more empyema add to the death roll, nor must we forget tuberculosis in this list.

Alcoholism, especially chronic, is generally a death warrant if pneumonia supervenes, and the chances are decidedly against recovery.

As far as concerns the blood changes, the cases with a moderate leucocytosis seem to do better than those with a normal count or a leucopenia. On the other hand, the presence of pneumococci in the blood, often looked upon as of ill augury, does not unfavorably affect the prognosis.

Duration: Delayed resolution not only awakens fears as to serious complications, but makes recovery itself problematical. The longer the illness lasts the worse the prognosis.

We see therefore all the different points to be considered in making a prophecy of the outcome of a pneumonia. At best the prognosis should be guarded, and if recovery results, we may feel that we have triumphed over a dangerous foe.

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MUNICIPAL HOUSING PROBLEMS.

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TUBERCULOSIS is in great measure a house disease; and it is from this viewpoint that I have made some study of municipal housing problems.

The expert and statistician, Dr. A. Suedekum, during a recent brief stay among us, compared housing conditions in German cities with those in the United States. He considered that Germany is advantaged over us by reason of the greater power of her public opinion; in the former country things that are customary here would never be tolerated. In Germany municipalities own the railroads and the street car lines; and have much land in their suburbs which they can use for the proper housing of their people. One of the German methods of solving the housing problem is by fixing of cheap commutation rates for workmen; there is no standard rate for all distances on the car lines, but charges are made on the zone system, according to the distances traveled. Thus men working in Berlin can afford to live twenty miles out in the country at a weekly cost in fares of 40 cents; and 25 cents for some who do not go so far. Dr. Suedekum has observed that railroads entering New York City have increased their commutation rates on the ground that they could not make them pay; yet the German railroads can earn two per cent. on their cheap fares—a return which satisfies the municipality, considering the resulting advantage to the public. He finds also a tendency in the newer sections of Greater New York toward the erection of large tenements, instead of two or four family houses; he fears that all the evils of the Manhattan East Side will thus be reproduced. In Berlin buildings are restricted as to their heights; in her centre none of more than six stories can be put up, and only the top floors may be used for business; in a zone beyond this the limit is four stories and a mansard; whilst in the suburbs one may build no higher than three stories and a mansard. In Germany, lofty tenements have not been found profitable; even with modern methods of construction it does not pay to build higher than four stories, the income from the stories above these being no more than the extra outlay they occasion. It is thus hoped that capitalists, for legitimate business reasons, will give up building many-storied tenements. Much may be done on a business basis, to remedy housing conditions; a company in which Dr. Suedekum is interested has put up a number of two and four family houses, each in its own little garden, with a playground or park apportioned to every twenty houses; and this investment earns his company six per cent. It has built in precisely the same districts wherein the old-fashioned tenements exist; and has proved that if capitalists would only undertake such an enterprise, they could effect great improvements for their tenants without sacrificing a fair return on their capital. The chief restriction placed on the workman by the building associations is that he shall not take in any lodgers; thus any likelihood of a congested population is obviated. Much could be done, by a proper system of taxation of undeveloped lands and of the unearned increment, to force speculators to make their property immediately useful to the body politic, instead of keeping it for years off the market, pending chances for greater profit. These things, joined with suburban fares, should enable the workman to live some miles out as cheaply (and much more comfortably and humanly) as in the heart of the city.

I have thus sketched without comment Dr. Suedekum's views, which he cheerfully confesses are based on cursory observation; a consideration of these views from the American viewpoint is now offered:

Here, more indeed than in Germany, public opinion should be vital and potent; for under our republican institution no idea, no sentiment, no legal enactment, will bear fruit which is vivified by the communal mind and heart.

The great railway lines that come into New York have indeed recently and quite generally revised their commutation rates; in defense of this procedure it has been stated that even at such rates as now obtain the commuter is carried at a loss to the Railroad Company, which expect to make up such loss by freight and express accruing in the process of development of the regions traversed by them. Again, with regard at least to Manhattan Borough, where most of the business of the metropolis is transacted, and where most of the daily labor is wrought, the natural conformation is altogether unique among great cities; and the traffic and housing problems are correspondingly much more difficult and complicated. Nevertheless the transit problems of New York City and its environs require most imperatively speedy and adequate solution. Dr. Suedekum's charming picture of his company's two and four family houses, with their gardens and the communal playgrounds, is one that is by no means lacking in our own suburbs. The point he makes that by the rules of building associations in Berlin no workman shall take in a lodger, is wonderfully well made. Here

is undoubtedly a potent evil in civic tenement life. The story has been told of a city apartment of three rooms, which were occupied by three families — one in the middle room, the second in the front room, the third in the rear room; and these three families got along quite well together until the family in the middle room wanted to take in boarders. Now, this anecdote, told by way of diversion, has been found to be based more than once on actual fact. Of course, in restricting against the taking in of lodgers, provision should be made for the house used as a boarding house.

A distinction must be made between congestion and concentration of population; this has been admirably indicated by Devine. Whilst congestion of population is an unqualified evil, a concentrated population is by no means necessarily so. Under the imperative condition of our seething modern civilization, concentration may be even beneficial. Sanitary science (the babe in the family of sciences) is oftentimes so evidenced in our cities, that people may now enjoy health within an area in which, a score of years or even a decade ago, the conditions would have been deadly for much fewer inhabitants. Tenement house laws (despite most virulent opposition where it should have been least expected) have compelled landlords to make the homes of their tenants sanitary; and on the other hand, landlords have had the enlightenment and the business wisdom (coupled with such humane sentiments as are not always absent even among landlords) of their own accord to make their tenements healthy. The plumbing and ventilation of houses are now such as even the imagination of a Dickens could hardly have revealed.

The great novelist, by the way, was in his day a most inspiring champion in behalf of decent housing for the poor. That impractical idealist declared at a public meeting that "he knew of many places in London unsurpassed in the accumulated horrors of their long neglect by the dirtiest old spots in the dirtiest old towns under the worst governments in Europe." Since that "pig sty period" there has been a very long, a very sad and a very dreary fight, waged mainly against vested interest, which are so often most cruelly maintained with heart-rending results in human suffering and death. Jephson relates all about that fight of many years, and how it is now gloriously won, in his Sanitary Evolution of London. And we have in recent years had a like battle fought in our own community, one of our warriors having been another potent dreamer as was Dickens, Richard Watson Gilder.

But to return to the present day. Our great civic communities have now pure water; our streets are adequately sewered. So, by reason of these and like improvements, we do not necessarily find a concentrated population an unhealthy one; whilst concentration secures certain economic advantages to a city.

The ever increasing gathering of people in cities seems an inexorable phenomenon; in this regard New York City seems peculiarly fated. Every week Europe sends us her emigrants by thousands and tens of thousands; and a very large proportion of these anchor themselves within the metropolitan limits. Reasons for this are: The clannishness of emigrants, which prevents their separation and dissemination throughout our most ample federal acres; perhaps they fear to be separated from their own people. Then there is the meretricious glamour of urban life, which makes men and women prefer the city to the natural salubrity and wholesomeness of the country; there was much more logic in this a score of years ago than nowadays, when the rural free delivery, the ubiquitous trolley, the telephone, the ten cent magazine, the mail order method of doing business, the moving picture and other cheap amusements, the various excellent musical contrivances and much else have robbed the blessed country of the dreariness which some have found in it and have turned almost every rural into a really suburban district.

Herein lies one of the most difficult problems related to the anti-tuberculosis propaganda. The consumptive is restored to a very measurable degree of health (he is either cured or his disease is at least "arrested") in the sanatorium, the tent-farm or the *colonie agricoie;* but to continue him under such salutary influences is most difficult, and oftentimes quite impossible. It may be he is naturally and fundamentally unfit for agricultural pursuits; but in deplorably many cases he returns by choice and not by necessity to the baneful civic conditions under which he has contracted his disease, with the result that he finally succumbs to it. The Committee in the Prevention of Tuberculosis of the Charity Organization Society of New York City found that early cases of tuberculosis, in good physical condition, can with difficulty be persuaded to give up their city employment; yet tradesmen and artisans who have been consumptives should find most congenial occupation in semi-rural towns and villages. In France, those noble workers in charge of hospitals for tuberculous children have to cope with the unwillingness of their cured cases to do light farming and outdoor work; their preference is generally to return to the slums from which in their grievous illness they were mercifully taken. On returning to those insanitary and perhaps vicious environments they are likely to redevelop the diseased conditions that have been healed or held in abeyance in the benignant rural atmosphere. At Villiers a colonie was established in which boys convalescent from tuberculosis were to be taught farming and gardening; it was greatly to be hoped that boys thus restored to health would become attached to a country life and would be tempted away from deleterious urban surroundings; it was, however, found generally impossible to retain them—they would not settle down happily to farm life. At Noisy-le-Grand, where only girls suffering from tuberculosis are cared for, I understand that like endeavor has met with no better success and for the same reason. Senator Jules Maline, in his *Return to the Land,* has presented a study of the merits of agricultural as against urban life in France, which appears to me very applicable to our own conditions. He recognizes that men will return to the land in great numbers only when the balance of human satisfaction is in favor of the country. It avails not at all to argue that the wealth of a people lies in its agriculture; that all human comforts and satisfactions are milked primarily from the generous bosom of Mother Earth. It avails not to hold forth that the country road has ineffable beauties such as no dirty street can hope to emulate; that by comparison with the meadow and the oak, the market place and the skyscraper are contemptible as to attractiveness. The problem involves much more than the simple question of financial profit and loss; so long as workingmen living in dark tenements

forget their sordid surroundings at the sight of parades, picnics, political meetings, cheap theatricals, gay saloons and hurdy-gurdies; whilst their rustic relatives have to go to bed at seven for sheer weariness and lack of diversions, the cityward rush will not abate.

Such is, I believe, among us as elsewhere the generally inevitable human trend toward the gigantic civic community, the problems of making them habitable have to be met—and are indeed in very large part being nobly met. The appointment, a decade ago, of the Tenement House Commission for New York City has resulted in greatly improved conditions in absolutely the most densely crowded region in the whole world. Vast renovations have been achieved; and although these were fought by many property owners, many others gladly made the improvements required by modern sanitary principles, if for no other reason than that they had the business prescience to discern that such improvements were, in the end, "bound to pay." And, after all, the average landlord is about as humane as anybody else; all he generally wants is enlightenment. New standards have been established; especially have sensible architects and builders, more than ever before, realized the desirability—and the necessity—of calling expert sanitarians into their counsels. And this is an important consideration, since in this generation and the next practically all the large towns and cities in our Union, housing our thirty millions or so of people who insist upon being urbanites, will have to be rebuilt, not to speak of those which will arise in regions as yet not inhabited.

Time was (as any middle-aged man will easily remember) when great cities had enormous mortality rates. It used to be computed that such vast communities as London and Paris would become extinct within the century were they not continually being refed by provincial blood. But to-day that situation no longer obtains. Modern sanitation is demonstrating how vast populations may live healthfully, and the principles of this science are, through wise legislative support, being intelligently and most beneficently applied; it is being grasped, as in the old Roman days, that "the public health is the supreme law."

Nowadays the great cities are almost as salubrious as rural districts; in some respects (as regarding malaria and typhoid fever) they are probably more so; on the other hand infancy and childhood and old age still find the country more healthful. As has been observed, concentration of population is not necessarily a dreadful human condition; for the modern systems of plumbing and of sewage, of model and well-ventilated though several-storied tenements, and of good and adequate water supply work for a fair measure of salubrity. Nevertheless over-crowding in large cities is a matter of constant concern to public-spirited citizens. And indeed our greatest cities seem more salubrious than those of from 50 to 100,000 inhabitants, by reason that in the former the health authorities are the better organized and equipped to cope with disease, and that in the latter modern sanitation has not yet "arrived." Some one has proposed as a part solution of the problems presented by teeming populations, the building, in congested districts, of tenements twice as high as those existing at present— which average six stories. High buildings have thus far helped to solve the problem of commercial congestion; and by analogy it is held that they might also solve the problem of congested homes. But there are peremptory objections to this specious and alluring idea. Commercial skyscrapers are usually isolated; should they in the course of time become so numerous as to form lofty, continuous canyon walls the resulting exclusion of light, sunshine and pure air would make the lower stories uninhabitable. Even as it is now, such are not over-comfortable; even now the attendant evils—dark or poorly-lighted rooms, where artificial light must constantly be used, however bright the day without—afford sufficient evidence that only a limited number of such many-storied structures are practicable. And these objections would be still more potent as to tenements, which must be occupied and slept in night and day and used for all the purposes of domestic life. The exclusion of light, pure air and sunshine from living apartments, especially in buildings facing on narrow streets, would mean the inception and prevalence of disease among the tenants, increasing progressively with the age of the building. How luxuriantly would tuberculosis, the bed-room disease, flourish in such congenial environment!

There are in the congested parts of most great cities large areas taken up with insanitary structures, and some non-producing land held for speculation; in such districts the capacity of the land for the wholesome accommodation of tenants has by no means reached its limits. In Chicago, as in Boston, New York, Philadelphia and other cities, model tenements have been built; and there are still extensive tracts ready for such structures. The capitalist can find no more sensible or grateful outlet for investment; "Philanthropy with 4 per cent. is an attractive, humane and sensibly business-like motto." Some two years ago the New York City and Suburban Homes Company had for dividend disbursements 4½ per cent. a year. Its losses during the previous five years from unpaid rents and bad debts were in the "wholly insignificant proportion of fourteen-one-hundredths of one per cent." It was then stated that the marked value of such investments is relatively stable, whilst fluctuations in railway and other stocks and bonds are facts "that some of us are too sensitive to talk about." London has above $100,000,000 invested in model tenements. In the certainty of reasonable profits from investments in sanitary urban homes lies a most hopeful element in the problem of population congestion. A most stupendous consideration remains —the factor of rapid and cheap transit to and from the city and its environs.

The Reliability of Finger-Prints as a means of identification was recently doubted in London, when a man charged with a felony was found, according to the evidence of the finger print, to have served a sentence in 1909; but he was able to show by his army papers that he was with his regiment at the time. An alibi being thus apparently established the prisoner was discharged. But further investigation by the police revealed that the man had in reality not been a soldier, and that he had stolen the discharge papers which he showed to the Bench. Further evidence that he was the man charged in 1909 was given by tattoo marks. Thus we have a further proof (if any be needed) of the reliability of the finger-print test, which has really never been known to fail when good impressions have been taken.

CHOREA (ST. VITUS' DANCE).*

BY JOHN AULDE, M.D., PHILADELPHIA, PA.

PART I.

CHOREA, as a disorder of childhood, is easily recognized, owing to the peculiar jactitations of the sufferer; its characteristic manifestations, confined to some local area, as the hands, the fingers, the toes, or the facial muscles in both children and adults, are generally regarded as a personal idiosyncrasy and not as an evidence of defective innervation due to chemical deviation. Indeed, St. Vitus' dance, from time immemorial, has been looked upon as a mere symptom of some occult condition or mysterious concatenation beyond the ken of human knowledge. Within recent years, the affluence of the harvest in bacteriology has created even more than a suspicion that this malady may also be the result of an hitherto undiscovered toxin which finds entrance to the system in some unaccountable manner. Why it should affect three times as many girls as boys has not yet been definitely "figger'd" out; neither have we any reliable data which will enable us to account for the identical symptoms arising from fright, over-study and exhaustion on the one hand, and the sequelæ of scarlet fever, measles and whooping cough on the other. While we can understand how a toxin, generated or developing in the course of an infectious disease, may so involve the nervous mechanism as to produce paralysis in one instance and chorea in another, it is incredible to assume that a similar toxin, like the sword of Damocles, is constantly impending over the rising generation, ready to "strike in" on the slightest provocation—fright, over-study, over-play, or physical exhaustion. Such a doctrine is monstrous in its conception—by far, too fatuous for modern science.

In the case of arterio-sclerosis, hardening of the arteries with defective nutrition, as it (chorea), occurs in adult life, of course, we have an entity, something tangible, in the form of an obstruction to the uninterrupted transmission of nerve impulses; but there is no satisfactory explanation forthcoming which will account for the counterpart of the symptoms in childhood without perceptible anatomic lesion. In consequence, therefore, of this gradually increasing agglomeration* of chameleon—like theories, it will be the object of the present article to develop a fundamental basis for the rational treatment of the disease—exact from a scientific viewpoint and practical from a clinical standpoint, thus bringing order out of chaos, "a consummation devoutly to be wished for."

Definition: A functional (?) nervous disorder, usually occurring in childhood. Symptoms, irregular muscular contractions (twitching).

Causative Factors: Naturally, our first inquiry will relate to the causative factors. What evidence is there favoring the suggestion of an anatomic lesion? Is there a substantial basis for assuming that the disorder is purely functional, simply a derangement of the physiological equilibrium? Again, the peevishness, irritability, and general tendency to misconduct (tantrums), of these children might lead to the inference that chorea was of psychological origin; in fact, the consecutive appearance of hysteria in many of these cases lends suspicion to this theory. For example, we learn from text-books that hysterical attacks are "explosions of nerve force," ("brain storms")? and the irritability of choreic children is merely a reproduction of hysterical manifestations in milder form.

What is the basis for this assumption? In chorea, it is taught that there has been "strain," that the nerves are "shattered" and the patient a "nervous wreck." How then, is it possible for the explosions to occur when the ammunition has been exhausted?

Fortunately, a better explanation is at hand—one which is physical or chemical, but entirely separate and apart from both physiology and psychology. Thus, when a trolley car with over-head wires runs over a wet rail that has been "sanded," sparks from the wheel fly in every direction—the sand being a non-conductor, the car is partially insulated, owing to the obstruction in the transmission of the electric current. So it will be shown that the so-called strains, nervous wrecks, tantrums, brain storms, explosions and hysteria, one and all alike, are due to demonstrable obstruction in the transmission of nerve impulses. The insulation may be partial or complete—anatomic lesion?—depending upon the susceptibility of the structures involved—physiologic deviation?—while the nervous derangement—psychologic defect?—will usually depend upon the degree, or intensity of involvement, although this is not invariably a reliable criterion. In general, however, the proposition holds good, that all deviations from normal in nerve conduction are the same in kind and differ only in degree, the evidence being more fully brought forward later on in this article. The solution of this question hinges entirely upon the chemical problem in nutrition.

Taking up the study of this subject in a logical and impartial manner, and considering its various phases and phenomena critically and dispassionately, it will be convenient to follow the lines indicated in the accompanying chart, "Causative Factors," which covers, practically, the entire domain, as understood at the present day.

Idiopathic: Chorea is classed as idiopathic when it develops spontaneously, or unexpectedly, as a primary, or first appreciable or noticeable disorder. Still, a careful investigation usually brings to light certain incidental facts which furnish at least a clue to the climax in derangement of function. Thus, we may obtain a history of fright, exhaustion from study, play or employment— referred to as extrinsic causes. Intrinsic causes include faulty nutrition, anemia and rheumatism, while automatic chorea should not be overlooked. The latter appears spontaneously and independently of the will in the form of apparently purposive actions or movements—usually regarded as a reflex from an external stimulus, but may likewise arise from intrinsic causes and continue as a habit.

I have included under this head also, certain reflex causes, both extrinsic and intrinsic, injury and phimosis together with worms and carious teeth.

Now, a word in regard to rheumatism as a cause, an untenable deduction, when it can be shown that the abnormal conditions predisposing to chorea—acid excess with diminished alkalinity of the blood and coincident or consecutive magnesium deposits involving the nuclear proteid—are precisely the conditions responsible for rheumatism. And just as long as these abnormal conditions remain, rheumatism will continue.

*Extracts from the MS. of a proposed book, entitled "The Chemical Problem in Nutrition."

*An odorless mass; an indiscrimminate assemblage; heap; cluster.

Restore the normal alkalinity of the blood, adopt suitable measures to promote magnesium dissociation—to overcome the temporary insulation—and rheumatism will disappear as if by magic. Futhermore, this treatment is curative—provided, of course, that the normal reactions of the body fluids be maintained. My impression is, however, that most persons suffering from subacute and chronic rheumatism value it too highly to part with it. They regard it as a pet rather than an infliction, and take both pleasure and pride in nursing it, and talking about it, and studying its interminably interesting peculiarities—and not infrequently they dilate with enthusiasm upon its unflagging persistence, as shown by the number of eminent physicians who have been utterly baffled in their most earnest solicitations to effect a cure.

It follows, therefore, that the treatment of chorea with intercurrent rheumatism will be varied or modified by the collateral medication demanded to counteract or liquefy the special toxin arising from secondary infection—practically, a concomitant of all disorders of an infectious or contagious character, as well as rheumatism, which is neither.

Septic Infection: In all acute infectious diseases, we have to deal with sepsis arising from the special or pathogenic bacteria responsible for the disorder. In addition to this, we have what is termed secondary infection, usually streptococcus, staphylococcus or diplococcus, a complication falling under the head of "mixed" infection, in which symbiosis often plays an important part—by either augmenting the activity or virulence of the original infection, or by diminishing or even neutralizing them entirely, so that the employment of bacteriologic products has now become a recognized scientific procedure in the treatment of various diseases prophylactic as well as curative. Examples of this are seen in the case of diphtheria, typhoid fever and hydrophobia, the results in such cases being lacking in uniformity—notably brilliant in many instances, but utterly useless at other times. There should be a more substantial basis established for this line of treatment than that which now prevails, viz., that its value depends upon early application. In view of the well known clinical facts relating to all diseases—the persistent tendency to acidity with diminished alkalinity of the blood, which lessens its oxygen carrying capacity, and impairs or destroys its inherent antiseptic properties—it appears logical to assume that attention to this detail would tend to insure greater certainty, while at the same time, measureably increasing the efficiency of treatment.

The foregoing suggestion is offered in connection with our study of septic infection as a causative factor in the production of chorea. For example, septic infection (septicemia), gives rise to a long train of symptoms, delirium being prominent. Failure to arrest sepsis leads to pyemia (pus formation), with chills and irregular variations in temperature, but the delirium generally subsides. Now, it is a clinical fact that in all such cases—septicemia and pyemia—alkalinization of the blood produces an immediate and marked amelioration of the symptoms—the scientific fact has already been presented, but we cannot discuss this question further, because it opens up the subject of treatment.

Admitting that sepsis is a causative factor in the production of chorea, we want to know whether it is direct or indirect, immediate or remote? Analysis shows that sepsis affects nerve function, interfering with or destroying the capacity for the transmission of nerve impulses; hence, it follows that sepsis produces an effect which amounts to an obstruction. Sepsis is, therefore, the medium, not the thing itself in producing chorea. Besides, chorea persists long after septic infection has disappeared. We may be able in many instances to trace the obstruction in nerve conduction directly to the septic infection; in other cases, the sepsis gives rise to inflammatory reaction, this being followed by obstruction and choreic symptoms, when sepsis becomes the indirect cause. Thus, septic infection may be the immediate or remote cause of chorea, although this deduction gives no definite or positive information concerning the exact nature of the obstruction—a question of vast importance and grave significance.

THERAPY.*

BY ELMER LEE, A.M., M.D., PH.B., NEW YORK.

SINCE the last meeting of the Association, many of our colleagues have died, very many of them young men. Could any of them have fared differently, was their treatment scientific? The men of the profession, who think, often ask themselves these questions. Mistakes are common in every sphere of life, but with us they frequently mean the tragedy of death.

Were physicians strictly scientific, their position in society would take the highest rank, and fabulous wealth would be no exception among them. Consider the sickness and death of the colleagues, within the year. Of what use were serums, vaccines, antipyretics, antiphlogistics, antiseptics?

Autotoxin chemically formed, from matter incident to portal and other circulatory engorgement, induced fever. Some physicians think only of their fever thermometers and the latest antipyretic from Germany or some late discovery in serums. The fact that so many lovable characters are continually dying from the effects of acute diseases, should make us thoughtful.

The one greatest satisfaction to a physician is a dependable treatment with recovery of his patients. Is there any dependable therapy, is it empiricism from first to last? It would seem, judging from all the facts relating to sickness and fatality, that the materia medica is of small usefulness. While the members of the Medical Profession are honestly and earnestly hoping for better results in practice, by reason of alleged great discoveries in pharmacy, even many of those, who believe the most in drug therapy, die without realizing the cherished benefits.

Fever ought to yield long before fatal complications rob the patient of a chance for life. There are many physicians who can not yet appreciate that helpful therapy does not necessarily imply the use of minerals, acids, alkalies, toxins, and the irritating properties of barks and plants.

*Read before the Section on Materia Medica, Pharmacy and Therapeutics, American Medical Association.

Truth is, indeed, stranger than fiction, and to affirm that fevers, generally, are curable without medicines, is hard for the profession to accept as fact. Fevers are, sometimes, also curable under different systems of treatment. But that method which is the simplest and safest, ought to be the most gladly adopted, whereas, it is too often neglected by doctors.

Practitioners who are unable to conscientiously see how fevers may be successfully cured without quinin and other salts of bark, unfortunately stand in their own light. But for the failures to meet the expectations of the sick and their friends, "Christian Science," faith cures, and the many other substitutes offered the people, would have no reason for their existence.

The patient judges from results. To his mind it matters not by which school he is treated, he is alone concerned with whatever will cure him.

A sick man is rarely capable of weighing medical evidence, his belief takes hold of whatever happens to fall in his pathway. If he chances to feel some improved sense of comfort, following on any passing thing taken into the stomach, it is the old story of "praising the bridge that carried him over." It was not the bridge, but his own vitality which saved him.

There is little hope or probability that the drug store will go out of existence. People in sickness turn to it for help. They were educated that way. Doctors come from the people and partake in early life of the traditions and beliefs in vogue. Few physicians can throw off early impressions.

The corner apothecary is a place of wonderful mystery and supposed potency to childhood. Some of the faith in the power for good in the dark liquids, and in the pellets and powders, is lost in later life. Still doses of pills and powders have their fascination for the masses.

It is not that there is any particular objection to prescribing medicine for patients which excites my opposition. The point that is important and which is emphasized, and if necessary is again repeated, is that medicine is not and never can become a science, so long as therapy is based on the present materia medica.

Chemicals of the future will in no wise be better or worse than such as now fill the stores. The more there are, the wider will be the differences in practice. It is the science of medicine which should concern us. The question is not whether patients do better with this or that medicine. If they get well quicker, and stay well longer, and have fewer relapses without drugs, the profession ought to know it.

As a scientific profession we want facts. There are, six or ten, chemical substances, which are, undoubtedly, useful at the moment of emergency, and for temporary employment. Quinin is one which is seldom or never required; the same can be said of all the preparations of cinchona bark. This is my observation from practice.

Sickness is primarily incident to daily mistakes or abuses, either consciously or unconsciously, imposed on the vital organism. The chemical action within the organism is altered, and disagreeable consequences follow. The early symptoms in disease are produced by contact impressions made by gaseous, liquid or solid impingement on nerves of sensation or motion. At this stage disease is functional, and it is at this time that proper therapy quickly cure the patients. The gases can be expelled or liquefied, the liquids disseminated or diluted and the solids dissolved and eliminated.

Usually at such times the appetite is wanting, which supplies the hint to wait till food is again required. Imperfect food is the commonest cause of disease. It is a difficult problem to always correctly estimate the needs of the human organism. Hence it is easily possible to understand the universality of sickness.

The individual mistakes in the care of the body, from day to day, seem quite sufficient to explain both sickness and also susceptibility. Wrong daily habits are the starting points that lead to disability. Health is the reward, and disease the penalty, according to how the day is spent.

Vitality is directly affected by habits of life, and habits may not be corrected, or changed, by foreign matter, either mineral, animal, or botanic chemicals. All that can be done by such treatment is to excite or depress sensation, and in that way, mask the symptoms of disease.

A spurious cure is affected, and that it is not dependable is proved by frequent relapses. Usually reconstructive vital force gains control in the end, but it is seldom that the bodily forces are aided by drug and chemical prescriptions. They are likely to do harm, if long continued.

The true practice of medicine is scientific and there is now no excuse to refer to it as either an art or an empiric science. Dependable results surely follow a right therapy. Fever is positively, easily controlled, and dangerous degenerations of vital structures, may be safely avoided. Pneumonias, typhoids, and enteric diseases should rarely terminate fatally, and convalescence should seldom require more than ten days to two weeks for any acute disease. All this is possible, and even practicable, yet it requires tact and experience to accomplish it, owing to the influences at work against a saving therapy.

Commercial enterprise is wide awake to its opportunities, and neither the patients nor the profession are able to resist the effect of the wholesale distribution of plausible advertisements of pharmaceuticals. The waste of money on "things to take" steadily increases. The profession is unmindful of its best resources in therapy when it resorts to chemical acids, alkalies, salts and the long but disappointing list of unavailing things kept for sale in behalf of the unfortunate patients.

For a period of nearly ten years there has not been a dangerous, or even possibly harmful prescription, put into the hands of a patient in my practice, covering a field of general medicine. Every remedy used is harmless and safe, under all conditions, giving me the least amount of concern with regard to mistakes and consequences.

My prescriptions are generally appreciated by the patients, especially the children, and the results are satisfactory. A half dozen favorite remedies properly combined compose a list sufficient for general practice. But it is also incumbent on the physician to specifically direct what food is to be taken, when, and in suitable quantities, and when the appetite is want-

ing it is safer to temporarily refrain from eating and drinking. The simpler the therapy, the greater is the necessity for tact, in meeting the exigencies of practice, for the greater part, patients expect medicines.

Exercise, self-imposed by the patient, is one of the surest measures that lead to rapid recovery, provided it is begun at the moment of the inception of disability. It increases circulation and augments the demand for fresh air.

Life saving is the most interesting and at the same time the most serious occupation in which human beings can engage, and as a profession we should have all knowledge possible, but also that highest knowledge based on a common sense which is capable of saving the members of the family circle from death.

127 West 58th Street.

THIOSINAMINE IN SENILITY.

BY A. D. HARD, M.D., MARSHALL, MINN.

The human body is but a conglomeration of various types of living cells, each intent upon its own life mission, and each group designated with some communal function to further the great whole as a passing unit of the eternal life of man. Of course the cells and groups of cells are interdependent, and death of a part may simply impede the wellfare of the rest, but not stop their life actions.

During the period of growth, the cells tend to accumulate faster than they die and depart, but after adult life is reached there seems to be an equilibrium established which continues for many years.

Then comes the decline of totality, and the departing cells drop out so fast that all bodily functions feel the effects of the turning tide, and we begin to grow old. What is growing old? The contracting cells of muscle substance degenerate into connective tissue cells, and muscular ability is decreased. Nerve cells shrivel and become less sensitive to natural stimuli; Bone cells become more brittle from accumulation of crude lime salts, and their duty, where smooth articular surfaces are needed for free and easy motion is impaired. One of the essential functions of cell nutrition and life is a constant flow of pabulum at an even pressure through the capillaries. The building cells, and those that are sent to the different parts of the body to meet useful demands of any kind, are carried in the blood current, and by natural forces are worked through the limiting membranes into their proper positions for duty in all the organs and tissues of the body. Their proper distribution depends largely upon the *vis a tergo* from the action of heart and elastic walled arteries. The latter being of far more importance than is usually supposed. A sudden impulse of power is largely opposed by inertia, a large part of the force being required to change the condition of rest into that of motion. For this reason the spasmodic output of force from the heart action would be inadequate to furnish this *vis a tergo*, if the equilibrium was not brought about by the compensating elastic action of the arterial walls. The jerks of force are distributed evenly in the arteries by this property of area expansion, and the flow of propelling force becomes continuous when the blood reaches the capillaries. You can see how very essential this function of equalization is from thus reasoning it out. One of the most conspicuous changes which mark the transition from youth to old age is loss of this expansive function of the arteries. For this reason some wise mind has evolved the epigram, "A man is as old as his arteries." The statement has behind it the crystalized thought of deep study and keen perception. Observation of all other functions of the body fails to discover any that so essentially make a man grow old by decreased action. This seems to be fundamental in several ways. The elastic walls themselves suffer from the effect of their decreased inelasticity, and grow increasingly less elastic. The tendency to descend, in an increasing ratio, extends thereby to all parts of the body, and "growing old" becomes like the sledding down hill of our youthful days, the farther you go the faster.

Now that we have taken a mental prospectus of the physiology of "growing Old," let us select from our armamentarium of effective remedies something which will stay the tendency to loss of elasticity in the arterial walls. If we can do this, may we not expect to retard the processes of decline which seems to be of a fundamental nature? Among chemicals which have peculiar effects upon human tissues by interstitial action, Thiosinamine has been proven to act as a resolvent of indurated flesh. Whether it acts by changing back into normal cells those which have stepped down from active to simple connective cells, we know not. It may be that it stimulates the deposit of original cells in increasing numbers, where the supply was short; or it may increase the natural life energy of existing cells, preventing degeneracy in those which otherwise would rapidly succomb to debilitating influences; or it may act indirectly, in decreasing the burden of duty devolving upon the already located cells. However it may act, we are justified in its use for the purpose indicated, and I suggest that Thiosinamine be given in one tenth grain doses three times a day for the purpose of staying the hand of Time, and keeping a man from "growing old."

Kissing the Shuttle.—In English cotton manufacturing districts it seems customary for the weaver to thread the shuttle by applying the mouth to it it and then drawing the weft through by a sucking action; this method is known as "kissing the shuttle." As the same shuttle is used by different weavers without any attempt at cleansing, this procedure affords a ready means of conveying pathogenic germs. In one year, three female weavers who all worked on the same looms and shuttles, died of tuberculosis. Dr. John Brown, a Medical Officer of Health, to whom these deaths were reported made inquiries, by which he concluded that the chief factor in the causation of the disease was this insanitary practice of "kissing the shuttle." And he strongly recommended to the authorities that when shuttles are used by more than one person they should be thoroughly cleansed and disinfected after each time of using. And in accordance with such recommendation the Borough Council had manufacturers advised that after use the shuttles should be immersed for about half an hour in a ten per cent. solution of izal, which in this proportion is non-poisonous and does not injure the material of which the shuttle is made.

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WHY CHRISTIAN SCIENCE HAS SUCCEEDED.

IN a previous editorial, we have spoken of the phenomenon of Mrs. Eddy's life. Without money, social prestige, education or marked physical attraction or personal magnetism of the ordinary sort, beginning when she was past middle life and apparently with a neurotic taint affecting her physical strength so as to render her incapable of doing more than dragging out a few more years of wretched existence, she not only attained an extreme old age of mental vigor and great wealth but acquired a controling influence over approximately a million persons of more than the average wealth and social standing. In political, military, medical and ecclesiastic history, we can find certain characters with whom a superficial analogy may be drawn but, in no case that comes to our mind, do we fail to find marked advantages, of one kind or another, which render the explanation of success more easy. In most instances, we see that the movement in question was rendered inevitable by previous events, that some leader must have arisen, and that, at most, the problem is to explain the exact course which history has followed and the chance or direction of events which has been determined the personality of the leader. In the case of Eddyism, with all the advantage which "hindsight" is supposed to afford, it is difficult to see how and why either the leader or the cult developed, without a close analysis of social conditions in the United States, particularly with reference to medical and religious matters. It is no wonder that many frankly attribute the reason to supernatural guidance.

Any wholesale modification of existing institutions or the establishment of a new one, requires the concurrence in time of a number of nicely balanced developments, a union, so to speak, of the crests of several different waves of human thought, into a tidal wave of success. By the law of chance, the union of several waves from different sources, all of importance and all at their crest, occurs rarely and we believe that the exact recurrence of complicated forces, varied in number and kind depends upon a chance that is infinitessimal. Thus, we believe that the Christian Science movement could have occurred at no other period in history and that the passing of the waves of thought which produced it, will result in its comparatively rapid evanescence.

One of the factors which rendered possible Christian Science and various other somewhat analogous movements, was the gradual development of religious and intellectual liberty. By this we mean not only the removal of governmental control from spiritual and mental beliefs; indeed popular aggregations in matters of faith have often been due to physical or moral oppression. We refer rather to the fact that, mainly within the past century, men have become accustomed to uniting in the declaration of a common religious or even scientific faith without expecting their union to react in any way upon their civil or economic life. Most of the early religious protestations and separations were connected with rather practical problems of life, freedom from physical torture, avoidance of taxation, interference with business, etc. It is within the memory of many that membership in this or that church might help or hamper one's trade, political aspirations or social life. Indeed, some traces of favoritism or persecution along religious lines remain but they are now due not so much to religious reasons as to racial or social prejudice.

Very recently, the spirit of tolerance as to beliefs which were humanly speaking, unknowable, has extended to matters of scientific nature, logic, etc. For a couple of centuries, the man who held that the world was flat suffered from the same spirit of intolerance though less disagreeably expressed, as anciently afflicted the one who believed it to be round. One of our acquaintances, of good standing in social and intellectual circles and a member of a university faculty, derives quite a revenue from drawing horoscopes, and he is consulted, in all seriousness, by many a man who is a power in business life. We know several physicians who believe firmly in spiritualism but no movement has been made to exclude them from medical organizations.

This liberality of view is of considerable importance in explaining the rise of Christian Science. It is easily conceivable that, 50 years ago, the acceptance of what most thinkers regard as the rankest sophistry, would be considered to disqualify a man from good judgment as a banker or business man or a dispenser of justice in regard to material things which he explicitly denied

to be real.

It is still possible for one gifted as a leader of men, to organize a local religious sect or community and to establish almost a despotism over one's followers, of a low intellectual and social status. Mrs. Eddy, however, if she ever contemplated this form of leadership, had before her the lesson of Mormonism, of various communities, still in existence but on the wane, as well as of those recently established among vagrant, almost pauper bodies. The ease with which periodicals dealing with special topics could be used to disseminate a cult, the habit, especially among women, of forming clubs for the most diverse purposes, and the various simple and agreeable ways of confederating such clubs to cover the entire country, undoubtedly pointed to a farther reaching, more numerous and more respectable potential following.

Prominent among other general factors which rendered the success of a cult possible, should be mentioned the economic and intellectual development in America, of a large class enjoying much leisure, trained to read and think and to express individual opinions or to assimilate those of others, but not inclined to severe exertion, either physical or mental; tinged with æstheticism, hankering for agreeable occupation and accustomed to combine social, philanthropic, and mildly educational enterprises.

Christian Science has opposed itself to, one might almost say, entered into competition with the churches and the medical profession. In combining the provinces of spiritual and physical, or rather mental, healing, it has gone back to the original and natural union of the priest and physician and this fact, in itself, has undoubtedly been a source of strength, however the differentiation of the two professions has been necessitated by human evolution.

Why has Christian Science been so successful in alienating many both from ecclesiastic and medical ministrations? Let us consider the two functions separately. Eddyism has carefully expunged from religious exercises everything that is disagreeable and lacking in æsthetics. While controlling the thought and actions of its adherents so absolutely that Mark Twain has compared Mrs. Eddy to the Pope, Christian Science has the specious advantage of eliminating the superior attitude of the clergy, of making the congregation theoretically a pure democracy, and of appealing both to ambition and self interest by making it possible for the individual member to become either a religious leader or a healer. From the community of interest, naturally appealing to members of one social grade, it renders the social life of the congregation less perfunctory, and more enjoyable than in the average church. In a way that it is rather difficult to describe, Christian Scientists seem to eliminate from their religion the element which makes most church members hesitate to bring it into their daily life. Detractors of the National Guard, have said that it was glorious and very safe. Christian Scientists enjoy a martyrdom having the same qualities. Finally, it must be acknowledged that most Scientists are very agreeable and well dressed; their congregation is a pretty consistent "Don't Knock and Don't Worry" club. Without definitely opposing any Christian denomination, or formerly setting up an article of faith actually in antagonism to Christianity, Mrs. Eddy has aroused the opposition of nearly every clergyman and priest and has given her adherents the decided benefits of an inoffensive and not even actively defensive attitude.

In our experience, the disciples of Christian Science consist largely of persons who want something out of the ordinary, who like to be enthusiastic about something in which they have no direct interest, and who rather like to pose as martyrs to a cause. It is by no means a coincidence that the growth of Christian Science has been synchronous with the reunion of the medical profession, indicative of a change of attitude on both sides. In no spiteful spirit, we may say that there is not much difference between a strictly non-material therapy and one in which the putative subdivision of matter proceeds to a point at which the molecule itself must be divided into several hundred parts. On the one hand, all kinds of physicians have tended to base their therapy on definite pathologic and pharmacologic facts; thus doing away with mysticism; on the other hand, they have paid serious attention to psychotherapy and, perhaps, in some instances, have gone entirely too far.

From the standpoint of the laity, Christian Science has "delivered the goods" in a great many kinds of cases. The idle, neurotic, scolding, complaining woman who formerly ran to the doctor for all sorts of trivial ailments or for no ailment at all, has received the kind of management that her case required, with satisfaction not only to herself, but, still more important, to her family. The tired, worried, business man with insomnia, perhaps harrassed with too orthodox sermons on Sunday and given hypnotic drugs on week days, has been smoothed down, comforted and enabled to sleep. Beside, there are many actual lesions, which are incurable, and in which medical treatment is not of much value, certainly of none so far as actual cure is concerned and which do not become conspicuously exaggerated from neglect.

Being practically unaccountable, able to meet disastrous results with sophistry, often being spared such results by the insistance of friends and relatives on actual medical or surgical attendance, and always able to fall back on the inevitable mortality of the most skillfully treated cases, as a comparison, Christian

Science has had an important though specious advantage.

To avoid undue length, we shall mention only one other factor bearing on the rise of Christian Science, namely the preparing of the way by a host of unorganized spiritual, mental, faith and otherwise designated charlatans, the influence of all of whom has been appropriated and centralized by Eddyism.

MILK AND INFANT MORTALITY.

THE inscrutable absence of a city chamberlain, the question of 30,000 ton battleships, the election of a senator devoted to the service of the people (if any such there be) the resurrection of a seeress—these be weighty matters, which appropriately enough find place on the first page of the morning paper. Yet a little reflection should convince one that they are fairly negligable by comparison with what is to be done for the infant in its initial and most formative year. Indeed, there is nothing so important in the world and for the world than to get the human unit properly started. If this were rightly done, if the child could be got rid of an unfortunate heredity, if it were rightly adjusted to its environment, and if its functions and will were normally begun, most of those other matters would either be unheard of, or they would find much more reasonably and just solution that now obtains.

About fifteen per cent. of all babies die before they have completed a year of life. And one-third of these deaths are by reason of digestive diseases; whilst somewhat less than one-fourth are due to respiratory and tuberculous affections. In the present crusade against infant mortality it is especially sought to eliminate these causes. A very large proportion of such mortality occurs during the season from July to October, and is directly traceable to improper feeding and improper food in the hot season. Breast-fed babies rarely have diarrhœal diseases. The mother's milk is the very best food for the human infant during its first year. And every mother should, unless she suffers some serious disease, nurse her child. By thus conserving its health the mother's own is also advantaged. Why many mothers, in our best of civilizations, object to this natural and manifest office, will not here be discussed. A minority of mothers are disqualified for this precious duty for physical reasons, many of which are, however, removable by medical care. When the mother cannot or will not nurse here baby, a wet nurse must be found whose own baby was born as nearly simultaneously as possible; this is obviously a rare chance.

It was formerly held that normal maternal lactation should be continued until the infant's twelfth-month; and should that time come in the hot months, to continue until the coming of cool weather; with the sixth month other food might be added to, or alternated with, the mother's milk. But now, states the *Journal of the American Medical Association*, supplementary feeding may be begun at 4 to 6 months; and normal nursing may be discontinued as early as the tenth month. And if the mother is averse to nursing her baby at all the compromise may be proposed that the breast should be given until the end of the third month; if the mother can be made to do this, the infant will be carried over the period during which artificial feeding is conducted with the greatest difficulty and the least success. But when for various reasons, the infant may not lie at its mother's breast, the best practicable substitute is cow's milk. Its composition, and the respects in which it differs from human milk, are now well known. Yet cow's milk varies greatly in quality and consistency; and some of these variations are intimately related to unhealthfulness. With increasing and scientific knowledge of fermentation and putrefaction, and of the relation of bacteria to these processes, it has become manifest that milk, although free of intentional dilution and contamination, readily undergoes baneful changes by reason both of its inherent tendencies and of extraneous impurities accidentally finding their way into it. At present the growth of pathogenic germs appears to be the greatest cause of poor and unwholesome milk. It is practically impossible, even with the utmost care, to get milk bacteria-free, even when it is first drawn from the cow.

Possible sources of contamination are dust and dirt in the air of the barn or dairy; and manure or other dirt loosely adherent to the cow's hide and hair, to the hands and clothing of the milker, and to the utensils necessary to milk transportation. For these reasons most stringent rules have been devised by the authorities in many states and municipalities, as for example: 1. The barn, or whatever place is occupied during the milking, should be of such construction that it can be readily, thoroughly and frequently cleansed. Such care will diminish the amount of dust and bacteria in the atmosphere; and the milk will in consequence be so much the purer. 2. The milker, of either sex, should wear immaculate clothing and have the hands cleansed aseptically before the milking. 3. The cow should be made clean by washing and regular brushing, so that no manure or other contamination may be cast into the milk. 4. The necessary utensils and especially the milk pails, should be thoroughly sterilized with boiling water. By such precautions may the dangers from impure milk be greatly obviated; as regularly as such precautions are disregarded or imperfectly carried out,

will the number of bacteria be abnormally large and the conditions be favorably for milk contamination.

Practically, most of the milk which comes to the consumer contains abundant bacteria; and the important problem is to mitigate their baneful effects. Their growth may be prevented by a low temperature. Therefore all milk should be cooled to 50° F. or below, as soon as it is drawn; and it should be kept at this temperature until its use. But what milk producers should do, and what they oftentimes—and not always willfully—really do, are sadly different things. Much of the milk the consumer gets is excessive in bacteria content; and such milk has already undergone changes that make it unsafe food, especially for infants. Not many years ago sterilization—that is, boiling—of the milk was counselled, to make it safe. This was found objectionable because: it altered the taste and made the milk less palatable; and the boiling induced such changes that the milk became indigestible for infants.

In lieu of this, such a temperature below the boiling point was proposed, as would inhibit the bacteria multiplication, and would not at the same time interfere with the palatibility or the digestibility of the milk. Experimentation has proved this temperature to be about 140° F., and the process of heating the milk to this degree has been designated "pasteurization." The procedure has unquestionably had a favorable influence on infant mortality. But it has been objected to on the scientific ground that pasteurization disassociates the organic combination of the protein and mineral constituents of the milk, so that they are less suitable for infant digestion. Besides that, should pasteurization become universal, the farmer may relax his precautions for cleanliness, and a great deal of "embalmed milk" will be foisted upon the community.

There should be no need of pasteurization when the consumer can get milk produced under salubrious circumstances, with the least delay in transportation, properly refrigerated, and used within twenty-four hours of the milking. But when, as in large cities, milk reaches the consumer 12 to 24 hours old—so that at least a part of it is from 36 to 48 hours old before it is drunk; and when the conditions under which it is prepared are not known, great care must manifestly be exercised to keep it at low temperature until it is used; besides which, for infants at any rate, such milk should certainly be pasteurized.

Of recent years municipalities have enacted ordinances regulating the production and distribution of milk, with the result that its quality had been greatly improved. Occasionally however, its bacteria content is excessive. So that more or less extensive epidemics of typhoid fever, scarlet fever, diphtheria and other dreadful infections have been traced to milk containing the respective germs of these diseases. Undoubtedly cases of tuberculosis come about through drinking milk coming from tuberculous cows—milk infected with bovine bacilli. But it has been shown that pasteurization—subjecting milk for twenty minutes to a temperature of 140° F.—destroys such pathogenic organisms as are here enumerated.

The conservative might well hesitate to advise universal pasteurization. Certainly the fresher the milk, and the better the conditions under which it is known to be produced and distributed, the less need is there for any measures designed to inhibit the germ life which more or less pervades it. Yet pasteurization is indicated, when there is a long interval between the milking and the consumption of the milk, and when little positive is known as to the salubrity of the conditions under which the milk is produced and distributed. For the destruction of pathogenic germs in milk in a way least to interfere with its palatability, there is at present no method more practicable. It is not to be suggested to a family which has a healthy cow, in its own stable, cared for by a cleanly and healthy man or maid. But to the consumer who has to use milk of uncertain age, from no one knows where, produced under equally obscure conditions, pasteurization will often obviate not only digestive disturbances, but also oftentimes suffering and death from infectious disease.

TYPHOID FEVER AND THE COUNTRY DOCTOR.

TYPHOID fever has long been termed the Autumnal Disease by reason that city dwellers would come down with it on their return from their annual vacations in the country; the tainted wells and the milk "right from the farm" were held responsible for the typhoid infection. The study of the filthy urban fly in recent years has resulted in considerable modification of the old view that such typhoid in cities was due to the infection in rural districts; and no doubt many a case of autumnal typhoid is contracted through the agency of that germ-transmitting insect.

Still the old view holds in many cases. And the Interstate Medical Journal (October 1910) in discussing typhoid prevention, considers that this problem has in recent years been shifted upon the country practitioner. It has long been known as the "traveler's disease;" in one city the cases arising in September 1909 showed that fifty per cent. had recently returned from a vacation. If one fiftieth of a city's population takes a vacation in August the figures show that each one of them has twenty-five times more chance of contracting the disease than if he had stayed

at home. These facts are placed in a new light by the final realization that each case arises from a more or less intimate contact with a previous one. Those who nurse the sick furnish eight time more cases relatively than those who are not in contact. Moreover, the most contagious period is probably in the early days, even before the symptoms are marked enough for a positive diagnosis.

The modern crusade against typhoid is based on the assumption that the disease is highly contagious, wherefore measures for early isolation and disinfection should be vigorously enforced. When several cases occur in one family they often follow one another at regular intervals as though contracted from one another. Progressive countries are even passing laws compelling the isolation of all typhoids; and health authorities are busy devising methods to insure an early diagnosis. Meanwhile good practice demands that when the disease is endemic every fever must be considered typhoid until it is proved to be something else, and the most extreme precautions must be taken to prevent its possible transfer to others. Since the disease is oftentimes a country one, and as many if not most of the city cases can ultimately be traced to the country, the problem of eradicating it must largely lie with the country doctor. Sanitarians cannot possibly prevent the introduction of bacilli into the city from plans now devoid of proper control.

The many chronic carriers now being discovered still further complicate the problem. Convalescents should all be considered carriers, although many of them react so promptly that the bacilli are soon dead or, if living, are so injured as to be incapable of further damage. It is suggested that if bacilli are still found after twelve weeks the patient be considered a chronic bacillus carrier. In European countries, where sanitary organization is very thorough, it has been found possible to allow typhoid carriers to continue ordinary labor, except the making or handling of food for others; and by the use of individual eating utensils and the careful disinfection of excreta in a separate closet the spread of bacilli has been prevented.

In America it seems at present impossible to obtain full reports, so that a large number of typhoids do not appear on the statistics, and the calculated death rate is unduly large. The only course would seem to be in the direction of educating the public so that typhoid fever will become widely known to be entirely preventable, if only the public will co-operate. When a proper public opinion is created it will be possible to impose severe penalties for failure to report cases.

The earliest possible diagnosis is essential; few countries' doctors have the time, or the skill or the laboratory facilities. As for cities, almost every municipality is now well fitted with its municipal laboratory and has its experts; so that there is positively no excuse for failure to make an early diagnosis, by which the health authorities would be enabled to act for the public welfare.

The sources of typhoid fever have of late years been carefully worked out in Germany, where it has been discovered that in nearly all cases where the source could be ascertained, it was a negligent convalescent or a chronic carrier, the latter causing about ten per cent. of infections. In over 90 per cent. of the cases, the medium of infection was the hands, the remaining ten being generally the milk, less often other food and very rarely the water or clothing. (In the United States however, polluted water seems to exceed milk as a source of infection). In about two-thirds of the cases studied in Germany the source could not be traced; but it is presumed to have been an unknown carrier as a rule, or a mild unrecognized case. Nevertheless many instances go to prove that when a city water supply is improved, typhoid is phenomenally lessened. The necessity, then, seems to be proved for isolating the typhoids, disinfecting the discharges and immunizing the family, nurses and other contacts.

The problem of the chronic typhoid carrier has as yet found no solution, states American Medicine. The unfortunates cannot be confined—they are too numerous; and as they do not react to treatment for the elimination of the bacilli they might require life imprisonment. They should, however, be warned—and then confined if they neglect the precautions given them by health authorities. The German crusade against typhoid has already greatly reduced the number of cases and deaths; and the lives preserved in that country should be followed here, instead of attempting the universal vaccination which some propose. There is probably necessity for far greater restriction in the case of the typhoid patient—the real distributor of the disease; he is perhaps more dangerous than a smallpox case, and health boards must keep close track of all carriers until a way is found to cure them. However, in Germany it has been found that the carrier who is careful rarely infects anyone else.

A Bedside Widal Test.—Dr. G. Gilman reports a bedside method of widal testing which consumes little time and gives results within a few hours. The test solution is a formalized culture of the typhoid bacillus, which can be procured from any pathological laboratory and will keep any length of time. In a small vial are placed 48 drops of the test solution; and to this are added two drops of the patient's blood. The tube is corked, well shaken, and set aside for 3 to 5 hours. A clear supernatant liquid indicates positive, a turbid liquid a negative reaction. The same technique may be used for other agglutination tests.

BIBLIOGRAPHICAL

A Handbook of Practical Treatment.—In three volumes. By 79 eminent specialists. Edited by John H. Musser, M.D., Professor of Clinical Medicine, University of Pennsylvania; and A. O. J. Kelly, M.D., Assistant Professor of Medicine, University of Pennsylvania. Volume 1, octavo of 909 pages, illustrated. Philadelphia and London, W. B. Saunders Company, 1911. Per volume, cloth, $6.00 net, half morocco, $7.50 net.

We have before us, the first volume of this great Handbook of Practical Treatment, by many contributors, each a master in his chosen field of work; their names alone are sufficient guarantee of the excellence and authoritativeness of the text, the whole under the guiding hand of the eminent editors.

The work is dedicated to that Pioneer in the science of therapeutics and a master of its art, Prof. Horatio C. Wood.

The book no doubt will be found helpful, resourceful, and a repository of the best, most modern and advanced views, in regard to the management of diseased states.

The text begins with a discussion, from a general viewpoint, of therapeutic measures, and is followed by special treatment of many general and local diseases. The treatment is not confined to the use of drugs by any means, but covers etiologic factors, dietetic regulations and physiologic methods as well. Surgical means are not lost sight of either, when they are indicated.

The study of the patient rather than the disease, is the key-note, as it always should be.

The general practitioner will be glad to find a chapter devoted to slight ailments and symptomatic disorders.

The subjects treated in this volume comprise prophylaxis diet, drugs, rest, exercise, massage, mechanotherapy, psychotherapy, hydrotherapy, balneotherapy, climatotherapy, aërotherapy, electrotherapy, and radiotherapy, as well as other miscellaneous, well-known and justly prized therapeutic measures. Emphasis has also been laid upon certain sorts of specific therapy such as organotherapy, serummtherapy, bacteriotherapy, vaccinetherapy, and chemotherapy.

In these days, increasing attention is given to etiologic factors, to dietetic regulations, to physiologic methods, and a continuous search is being made for specific remedies, all of which is recognized in this work, and our readers will find it of great service along these lines.

We cannot too heartily commend this work to our readers as one of the most advanced along its lines of any with which we are acquainted.

The physical part of the work is all that can be desired.

State Registration for Nurses.—By Louie Croft Boyd, R. N., Graduate of Colorado School for Nurses. 12mo of 42 pages. Philadelphia and London, W. B. Saunders Company, 1911. Price, 50c. net.

This little book is a comparative summary of the laws in the United States governing the registration of nurses, with a bibliography upon the subject, and put in a shape that will prove serviceable to the nurses in those states yet to seek legal enactments, and be of use as a basis in the gathering of more data to complete the history of the registration movement in this country.

It is a book every nurse should have.

The Principles and Practice of Modern Otology.—By John F. Barnhill, M.D., Professor of Otology, Laryngology, and Rhinology, Indiana University School of Medicine; and Ernest deW. Wales, B.S., M.D., Clinical Professor of Otology, Laryngology and Rhinology, Indiana University School of Medicine. Second edition revised. Octavo of 598 pages, with 305 original illustrations, many in colors. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $5.50; half morocco, $7.00 net.

The second edition of this excellent work comes to us with a few important changes in the text, and some additions.

The chapter on the examination of the function of the ear has been rewritten, there is a more extended statement regarding operative injury to the facial nerve, a description of the conservative radical mastoid operation (health), and several paragraphs relating to the symptoms, pathology, and surgical treatment of Labyrinth Suppuration. The illustrations are original, ample, practical and helpful.

As we have said before, it is one of the best books on this subject with which we are acquainted for the student and the general practitioner. The prevention of aural disease is the key-note.

Physically, it is a fine piece of book-making for which we have to thank the eminent publisher.

Personal Hygiene and Physical Training for Women.—By Anna M. Galbraith, M.D., Fellow of the New York Academy of Medicine. 12mo of 371 pages, with original illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $2.00 net.

The aim of this work is to present in a clear and concise manner the fundamental physiological laws on which all personal hygiene is based; together with the practical, detailed directions for the proper development of the body and the training of the physical powers to their highest degree of efficiency by means of fresh air, tonic baths, proper food and clothing, gymnastic and out-of-door exercise, so that the tissues will be placed in the best possible condition to resist disease.

The book should be read by every woman in the world, and physicians should commend it unqualifiedly. The illustrations and directions for physical culture are of the best, and can be followed by any reader.

Collected Papers by the Staff of St. Mary's Hospital, Mayo Clinic, Rochester, Minnesota, 1905-1909. Octavo of 668 pages, illustrated. Philadelphia and London, W. B. Saunders Company, 1911. Cloth, $5.50 net.

This is a book for the surgical clinician from a very high source.

It is not claimed that these papers have not appeared in print before, in current medical literature, but here we have them together, and thoroughly indexed for practical use.

It is a splendid companion to Cabot's "Differential Diagnosis," and completes the field of clinical investi-

gation in medicine and surgery.

With both of these books, the general practitioner will be well equipped for practical service.

Differential Diagnosis. — Presented through an analysis of 383 cases. By Richard C. Cabot, M.D., Assistant Professor of Clinical Medicine, Harvard Medical School. Octavo of 753 pages, illustrated. Cloth, $5.50 net. Philadelphia and London, W. B. Saunders Company, 1911.

No more important or useful book can be found by the medical clinician, or by the general practitioner, than this work on "Differential Diagnosis," by Dr. Cabot. No day passes, without more or less grave questions arising as to diagnosis, and what a comfort to be able to clear them up!

The text has been prepared in a concise, clear, practical manner, just what one requires for every-day use, and is profusely illustrated.

The work has been done in a prolific field, by a master hand, and it must be unqualifiedly commended to our readers.

Diseases of Children for Nurses. — Including Infant Feeding, Therapeutic Measures Employed in Childhood, Treatment for Emergencies, Prophylaxis, Hygiene and Nursing. By Robert S. McCombs, M.D., Assistant Physician to the Dispensary and Instructor of Nurses at the Children's Hospital of Philadelphia. Second edition revised. Octavo of 470 pages, illustrated. Cloth, $2.00 net. Philadelphia and London, W. B. Saunders Company, 1911.

This is another wonderful boon for nurses, and it covers a field in which it is especially wanted.

The revised edition is a great improvement over the first.

The subjects of intestinal diseases, therapeutics and artificial feeding have been improved and amplified.

The nurse cannot fail to find this work a thoroughly satisfactory guide.

Systemic (Including Special) Pathology. — By J. George Adami, M.A., M.D., LL.D., F.R.S., Professor of Pathology, and Albert G. Nicholls, M.A., M.D., F.R.S., Assistant Professor of Pathology in McGill University, Montreal. In one octavo volume of 1160 pages, with 301 engravings and 15 plates. Cloth, $6.00 net. Lee & Febiger, Philadelphia and New York, 1911.

The first edition of this great work has been exhausted in about a year and instead of resting satisfied with such evidence of approval, the authors have spared no effort in the thorough-going revision just published. This single volume covers the whole vast subject of special pathology, and it would have been considerably smaller if it was not distinguished from other works by two very valuable features. namely, first, the inclusion of the blood and circulatory organs (usually and erroneously considered under general pathology) and secondly, the treatment accorded to disturbances of function as well as of structure. Obviously, *function* and its derangements are what the clinician and practitioner most wish to understand, and structure is merely a step thereto. As a connecting link, therefore, between theory and practice, functional pathology is of prime importance, and a work properly emphasizing it is indispensable alike to student and practioner. The keynote of the book is to link theory to its practical application, and to be suggestive and helpful.' Among the many changes effected in this revision, we may note that the chapters on the ductless glands and the nervous system have been rewritten, the latter being almost recreated. The section on the urinary system has been greatly amplified and the chapters on the circulatory and respiratory systems have been made more logical, coherent and adequate than before. In the new edition, Dr. Adami has written practically the whole of the introductions to the circulatory and respiratory systems and the ductless glands and about half of that on the urinary function as well as sundry comments throughout the text, the remainder of the work being from the pen of Dr. Nicholls. In another sense, the whole of the volume represents both authors, as they have collaborated over its arrangement and harmoniously criticised and emended each other's work.

There is no doubt but that the second edition will increase the great favor with which the first edition was received.

There are really two volumes of this work, but each is complete in itself, can be obtained singly, but the first covers General Pathology, and is required to complete the subject.

Any reader requiring an up-to-date work on Pathology cannot fail to be satisfied with this publication.

Case Histories in Pediatrics. — A collection of histories of actual patients selected to illustrate the Diagnosis, Prognosis and Treatment of the most important Diseases of Infancy and Childhood. By John Lovett Morse, A.M., M.D., Assistant Professor of Pediatrics, Harvard Medical School, Associate Visiting Physician at the Infants' Hospital and at the Children's Hospital, Boston. Octavo, pp. 320; illustrated, $3.00. Boston, W. M. Leonard, 1911.

The author has selected One Hundred actual Case Histories, classified them under Section Headings, "Diseases of Nutrition," etc., and considered each case under the captions History, Physical Examination, Diagnosis, Prognosis and Treatment exactly as he has done before his post graduate classes.

A very complete index makes the book valuable for systematic reference.

The text deals with actual conditions as they are met in practice.

The treatment is considered the most important part.

The work is original, thorough, interesting, and will be found very serviceable.

Compend of Gynecology. — By William Hughes Wells, M.D., Associate in Obstetrics in the Jefferson Medical College, etc., etc. Fourth edition, revised and enlarged with 153 illustrations, pp. 290; $1.00. Philadelphia, P. Blackiston's Son & Company, 1911.

This valuable little book has been revised and enlarged for its fourth edition.

This series of manuals is of the greatest service to students and to general practitioners for ready reference. The information is in a most condensed practical shape.

National Association for the Study and Prevention of Tuberculosis.—Transactions of the Sixth Annual Meeting, Washington, D. C., May 2, 1910. Wm. F. Fell Company, Philadelphia, 1910.

The transactions of this representative association are timely, and of great interest. The text is divided into three sections, Sociological, Clinical and Pathological. Covering the publication of valuable papers with the discussion upon them.

Such of our readers as wish to keep in touch with this important movement, and its progress, should obtain a copy of the publication, as it shows what has been done in this work to date.

Leucorrhœa and Other Varieties of Gynæcological Catarrh.—A Treatise on the Catarrhal Affections of the Genital Canal of Women; their Medical and Surgical Treatment. By Homer Irvin Ostrom, M.D. 179 pages. Cloth, $1.00. Postage, 6 cents. Philadelphia, Boericke & Tafel, 1911.

The author of this valuable little book has classified Gynecological Catarrh upon the character of the discharge, and it is excellently done.

Part four deals with Therapeutic Suggestions, including a repertory, which will be found of great service to those who use such works.

The Testimony of the Clinic.—By E. B. Nash, M.D., 209 pages. Cloth, $1.50. Postage, 6 cents. Philadelphia, Boericke & Tafel, 1911.

This little book is intended for the strict followers of Hahnemann. The author has illustrated his work by detailing one hundred characteristic clinical cases under various drugs.

It affords a good opportunity for any one who desires to test the truth of the author's assertion as to 1st, The Similar Remedy; 2d, The Single Remedy, and 3d, The Minimum Dose.

The basis of the prescription is plainly stated, so as to enable the reader to judge of the "proof of the pudding."

The Care and Training of Children.—By Le Grand Kerr, M.D., of Brooklyn, N. Y. 12mo, cloth, 75c. net; by mail 82c. Funk & Wagnalls Company, 1910.

The author has condensed the best of many years' experience and observation as a physician, together with the more intimate observations of numerous parents, who, under his appreciative eye, have made a study of the subject. He has not sought to elaborate a *"system"* of training, and imprint thereon his own theories, but has rather reflected in a series of monographs, the matured experience of the many. There is scarcely a feature of child training, hygienic, physical, mental, moral, that is not considered, and the result is worthy of our consideration, as well as that of all parents.

"Salvarsan" or "606."—Its Chemistry, Pharmacy and Therapeutics.—By W. Harrison Martindale, Ph.D., Marburg, F.C.S., and W. Wynn Westcott, M.B., Lond.; D.P.H., H. M's Coroner for North East London. Octavo, pp. 77, $1.50 net. New York, Paul B. Hoeber, 1911.

This little volume contains a complete résumé of all that was known in relation to Dioxy-Diamino-Arsenobenzol, from March 15th to December 17th, 1910.

There is an interesting introduction to the subject, then follows the chemistry, therapeutic uses and results, specific treatment, dose, intramuscular injections, subcutaneous injections, intravenous injections, apparatus used, untoward results, in fact every detail so far known is given in order to enable the reader to employ the treatment with safety.

Those readers interested in the subject will find the book worth having.

Practical Physiology.—Edited By M. S. Pembrey.—Illustrated by numerous diagrams and tracings. Third edition, octavo, pp. 480. New York, Longmans, Green & Company, 1910.

This book has been especially prepared for the medical student, and affords a training in practical physiology such as he needs.

An advance in the knowledge of the living organism as a whole, one organ reacting upon another, should have a direct relation to medicine. It is the living animal treated as a unit that forms the basis of this work, and that is what the clinician must have in order to succeed in his work.

The present edition is in many respects a new book by revision and rearranging.

It consists of two parts, Experimental Physiology and Physiological Chemistry.

We commend the book to students and to the general practitioner.

Principles of Public Health.—A simple text-book on Hygiene presenting the principles fundamental to the conservation of individual and community health. By Thos. D. Tuttle, B.S., M.D., Secretary and Executive Officer of the State Board of Health, of Montana. 12mo, pp. 186; price 50c. Yonkers, N. Y., World Book Company, 1910.

This is another excellent book for school children, and no school should be without it. It does not contain a superfluous word, is simple, plain and clear in its diction, and interesting.

CORRESPONDENCE

SOME ADDITIONALS TO UNCINARIASIS.

To the Editor of THE MEDICAL TIMES:

Dubini first described the hook-worm in man. The total length of the female worm will vary between 10 and 18 mm., while the male worm is but slightly more than one-half this length. The parasite is widely spread in tropical and subtropical countries and is one of the most fatal of all parasitic diseases. While serving the Austrian Army, I had plenty of occasions to treat uncinariasis. We had about 300 cases, infected by anchylostomum duodenale; 75 of those was fatal. In the United States a few cases occurred, and it was not until the interest aroused in tropical diseases by the Spanish-American War and the work of Ashford in Porto Rico that the attention of American physicians was called to the disease. It has been found especially among the miners in Pennsylvania. Among the miners of Germany and Austria-Hungary the disease has increased very much of late years. I had opportunity to observe a few cases in the Park View Sanitarium, Columbus, Ohio, 2 to 3 years ago and found them terrible ones. The diarrhœa, also mixed with dysentery, was observed during 20 days, fever intermittent, sometimes very high, the pains in the intestines awful. In Egypt the disease is prevalent, not only among the natives, but among the Indian. The naked-eye appearance of the uncinaria Americana and the uncinaria duodenale (old-world hook-worm) is quite like that of the oxyuris, but when studied under a two-thirds objective, both the head and the tail of the uncinaria will be found to differ radically from those of the oxyuris. Macdonald, T. F. (Experience of Ankylostomiasis in Australia), (Lancet, p. 102, and Journal of Tropical Medicine and Hygiene, 1908, p. 25), has

directed attention to the presence of ankylostomiasis in Australia, and the tendency to moral degeneration associated with the disease. This occurs in children as well as in adults, and is probably due to a weakened physiology of the victim and existing nerve toxin. Schueffner (Centr. fuer Bact., Vol. XL p. 683) has an interesting paper dealing with the skin irritation produced by the passage of the larvæ into the tissues, and has observed, in Sumatra, that other parasites present in the stools, notably Strongylus stercoralis and the larvæ of a fly were apt to crowd out the young ankylostomes, so that it was difficult to obtain cultures of the larvæ. This is an important observation, but requires confirmation.

While on this subject I may refer to a paper by Branch on the culture of ankylostome larvæ. He has found both varieties of the worm, namely: A. duodenale and N. Americanus in the West Indies, and has succeeded in obtaining the larvæ by the following procedure: a portion, the size of a hazel nut, of fæces, containing abundant ova, is laid on a piece of lint in a Petri dish, and enough sterile water is added to saturate the lint and wet the bottom of the dish. The dish is left at room temperature exposed to light near a window and the supply of water is maintained as required. The larvæ hatch in about three days, and after two or three days more they begin to find their way into the water at the bottom of the dish, which must be kept wet enough. Soon after they are hatched one may see larvæ swarm on the surface of the feces by breathing on it. They protude their bodies and wave excitedly. They climb on each other so as to form actual tufts, which can be picked off with the point of a needle. For mounting he recommends embedding in a smear of glycerin and egg-white, treating with absolute alcohol, washing to dissolve out the glycerin, and staining with hæmatin and eosin.

A considerable number of parasites must be present to cause any symptoms. The investigations of many physicians in the Southern States have shown that in some districts a very considerable percentage of even comparatively healthy children have the ova in the stools.

Stiles groups the cases into the three divisions of light, medium and severe. At the onset in the stage of incubation there may be gastro-intestinal irritation and fever. In the advanced condition anæmia is the most characteristic feature: The skin is of a dirty, muddy hue, sometimes of a waxy-white color. As the disease advances and the anæmia becomes more pronounced, the liver and the spleen become enlarged and there is an effusion into the abdomen, so that there is a pot-bellied condition, due partly to the causes just mentioned and partly to the flatulent distention. I have examined a few cases, in Columbus, Ohio, and found no more red blood cells than 2, 5—3 million, hæmoglobin was never higher, than 40%, eosinophiles sometimes 5-6%, mast cells 2%, large mononuclears 16-18-20%. The ovum of the uncinaria measures between 0, 05 and 0, 06 mm. in length by 0, 03 to 0, 04 mm. in breadth. It is common to see ova rather dark and slightly granular in appearance while others are faintly opalescent. A third variety of ova may be almost hyaline, except for a small portion extending along one side of the capsule, where a faintly granular body is seen—an apparent embryo. When the feces is allowed to stand at incubating temperature, the embryos are seen to develop rapidly and some will have escaped from their ova in from 24 to 48 hours. The finding of shells of ova showing a slight line or opening is at such times very common.

Dr. P. Leiper (British Med. Journal), who employs the term agchylostomiasis, has shown, that the so-called "American" hook-worm is widely distributed in Africa. It occurs on the West Coast, in Uganda and in North-West Rhodesia. It has been found in Ceylon, Assam and Burma too. The eggs of what is apparently A. Duodenale are frequently found in the stools of Egyptian soldiers in Khartoum with Beta-naphthol nearly 20,000 persons were treated within a period of six months and with most gratifying results. It was found that, as a rule, five doses of thymol were sufficient to practically cure a patient.

Hermann's method of treatment by means of eucalyptus oil, chloroform and castor oil was described by Philips, who recorded good results obtained with it in Cairo. It seems to be efficient and practically free from danger. For the ankylostomiasis of mines, sodium chloride, has been shown to be a prophylactic and can be used in a 2 per cent. solution as a spray, but, as Looss points out in a paper dealing with many particulars of the life-history of the larvæ, the only efficient preventive measure is a system of conservancy.

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PTOMAINE POISONING.

To the Editor of the Medical Times:

I have just read with much interest Dr. Geo. B. H. Swayze's account of his tussle with a case of ptomaine poisoning—Swayze's writings are always good—They hold the reader's attention to a finish—But in my judgment the treatment of his case could have been improved upon. The Doctor was too ill to conduct his own case and should have complimented some M.D. by calling him in counsel, even if he preferred his own medicine.

In almost forty years of active practice I have had my share of experience in like cases. In treating and managing similar attacks we cannot always allow the treatment of one case to govern the next except in one particular, viz.: empty the stomach, in some way, of its contents as soon as possible or as soon as the cause is known. The safest, easiest, generally at hand, and most effective emetic I know of is the tepid mustard draught. Fill the stomach with all it will take of this mixture, it will then come up without much effort; and generally one good emptying will stop all further vomiting and straining. Sometimes a second or possibly a third must be employed to relieve and quiet the stomach.

The next procedure is to administer the most direct antidote to the poison food taken when the cause of the toxemia is known. As it was in the Doctor's case, to follow the bad cold storage egg taken, possibly *Colchicum* would have been the chemical antidote. But in his case it was not long until the symptoms pointed to the remedy. The dizziness, thirst, restlessness, fear of death with the other symptoms present suggested *Arsenicum* as the indicated remedy to completely restore "Richard to himself again." When the remedy is selected as indicated by the symptoms present

in each individual case, by the law of *Similia,* it is scientific and can be relied upon to do its work. Then in these cases, after a complete rest, the stomach will take kindly to some light diet such as albumen water, fruit juice, diluted milk, malted milk or some light animal broth. With this method of handling such an attack judging from my former experiences Dr. Swayze's condition would have been on the second or third day in the line of convalescence where it was on the eighteenth day. But the story would not have been so interesting to write or read as the Doctor has made it.

The Doctor's experience should be a warning to physicians to be careful what they eat. "Cold Storage" is doubtless good in a way, but its advantages are often abused to the detriment of food stuff.

Middletown, Ohio. T. E. Reed, M.D.

RETROSPECTIVE

Intestinal Toxæmia in Children. — This is perhaps one of the most frequent conditions found in children under three years of age. By the term intestinal toxæmia is meant a condition in which toxæmic symptoms, due to an absorption of poisonous material from the intestines, arise. The poisonous material is nearly always some undigested food. Food in all probability given to the child which taxes its digestive capacity. The symptoms arising from it are at times very alarming, and simulate in one phase or another almost all of the diseases of childhood. They vary from a slight rise of temperature with moderate prostration to a very high temperature with convulsions. The diagnosis of the condition has to be made mainly by exclusion, and it is not always possible to do so on the first visit. The history usually obtained is that the child has enjoyed excellent health when suddenly fever was noticed. This may vary from 101° to 105° F. in the more severe forms of toxæmia. A thorough physical examination of the child, which should include the drum of the ear, nasopharynx, chest and abdomen usually reveals nothing. Sometimes there is a history of vomiting, constipation or diarrhœa. If the question few days. They have been either somewhat darker of the stools is gone into more deeply, we usually find that the color has not been normal within the past or lighter in color. In some cases, if we question closely, an indiscretion of diet will account for the condition. The temperature will very often keep up for four or five days, and is often very puzzling. As for the treatment, the first indication is to administer a brisk cathartic, but one that will not irritate the intestines. Castor oil or the citrate of magnesia are about the best, and safest to use. It is often advisable to give a mild cathartic every day until the temperature falls to normal. If there is any mucus in the stools a high enema containing bicarbonate of soda, one tablespoonful to one quart warm water every day is very serviceable. The regulation of the diet is most important. The articles of food most easily digested are given. It will in the majority of cases be found better to omit all farinaceous foods and milk, and give only broths and beef tea, and possibly some strained juices of orange or pineapple. Among the drugs of greatest value are salol, papain and a mixture of rhubarb and soda. An alcohol bath to reduce the temperature and quiet restlessnes is helpful. Other symptoms should be met on general principles.

Infantile Paralysis.—Dr. J. L. Morse (Boston Med. and Surgical Jour., Jan. 12, 1911), in outlining the treatment, remarks that hexamethylenamine can do no good after the appearance of the paralysis, because the harm has then already been done, but it is possible that it may do good if it is given before the appearance of the paralysis. It may act as a prophylactic remedy, if given to all children who may possibly have been exposed to the disease. Local applications are useless. The use of the affected parts, electricity and massage must be avoided during the acute stage, because stimulation of the peripheral ends of the lower motor neurous causes stimulation of the gangtion cells of the neurous and consequently tends to increase the trouble. It is rest and not stimulation which the gangtion cells need. These measures should not be begun until six weeks after the onset of the paralysis. If there is pain or tenderness, they should not be begun until three weeks after the cessation of the pain and tenderness, however long this may be. Strychnine must be avoided in the acute stage because it is a stimulant to the lower motor neurons, and as already stated, it is rest and not stimulation which is needed. The author quotes Flexner, who states that the serum treatment of poliomyelitis must at the present time be regarded as strictly in the experimental state, and it cannot be predicted how soon or whether such a form of the specific treatment of the disease will be applicable to the spontaneous epidemic disease in human beings. On general principles moderate catharsis and a light diet are of some use in limiting the progress of the disease. A very important part of the treatment during the acute stage is that directed to the prevention of contractures. These develop very quickly and if they develop, make the later treatment much more difficult and materially delay recovery. The development of contractures can be prevented by using a cradle to keep the weight of the bed clothes off the legs and by the proper application of light splints.

The Decline of the Birth Rate.—In an editorial note the Medical Record says that it is well known that in all civilized countries the birth rate has declined and is declining, but the reasons advanced for this vary considerably. Professor Brentano, in the Economic Journal for October, sets forth his views on the subject. He premises that the more prosperous the country or district the less fertile the inhabitants. For example, France, the richest country of the world, has by far the lowest birth rate. Native-born Americans again have few children, indeed it has been computed that if the continued emigration from Europe were to cease this part of the continent would, in view of the fertility of the negro, become black in quite a short predeterminable time. In Australia, where the working classes are better off than anywhere else in the world, the decline of fertility has been almost the greatest of all. Professor Brentano rules out altogether any connection between the decline in the birth rate and religion or race. It first appeared in France when that land was predominantly Catholic, and it is claimed that only poor Catholics and poor Jews yield a high birth rate. Moreover, it cannot be attributed to increased industrialism or to the growing tendency to live in towns. The French peasants have fewer children than the urban laborers. The professor thus specifies the reasons why fertility showed decrease

with increased prosperity: 1. The diseases of sex, which appear as concomitants to postponed marriages. 2. Mental disease, caused by nervous strain. 3. Dimunition of desire for offspring, both because of competing pleasures and because of a more refined feeling for children. The most potent check, however, is the cost of maintaining a larger number of children, and the decline of infant mortality is another cause. Attention is also drawn to the fact that, although the birth rate has declined, the surplus of births over deaths has never been so great. Professor Brentano appears to have succeeded in the object which inspired his article, that of attempting to shatter the Malthusian creed. The most hopeful feature of the present discussions concerning the decline of the birth rate in civilized lands is that the master minds of medical science are grappling with the problem of how to improve the race physically and mentally.

Ichthyol in Pulmonary Disease.—Dr. W. S. Barnes (Med. Record, Jan. 21, 1911) believes that ichtyol is a safe and valuable remedy in the treatment of such diseases of the respiratory tract as tuberculosis in the early stages, bronchitis in all its forms, and pleurisy. When given in large doses as high as twenty grains, three times a day, ichthyol will produce a tendency toward frequent movements of the bowels. It diminishes the quantity of the discharge from the bronchial mucous membrane in the case of patients who have recovered from acute bronchitis but still retain a cough, accompanied by profuse expectoration. Barnes believes that the durg is rapidly broken up in the stomach, and that it acts as a stimulant on the gastric mucous membranes promoting a larger flow of gastric juice and increasing the power of digestion, thus aiding in the assimilation of food. Patients who have done well under ichthyol immediately begin to show a greater desire for food, and their appetites begin to increase with remarkable rapidity. In prescribing ichthyol for internal administration, Barnes' practice has been to give it in solution, and because of its objectionable taste, it is necessary to combine it with ordinary peppermint water, which makes a fairly palatable mixture. Sometims he adds a small amount of fluid extract of licorice, together with peppermint water. It should be given after meals. A very convenient form of administration is to give it in the form of a tablet containing 5 grains.

Acute Pleurisy.—The acute inflammations of the pleura are: dry pleurisy; pleurisy with effusion; empyema; hemorrhagic, diaphragmatic, encysted and interlobular pleurisy. In a rational consideration of the etiology of these inflammations we have to bear in mind both the predispositions (by which the tissues are rendered vulnerable), and the invading pathogenic organisms.

Dry pleurisy (fibrinous or plastic) may be primary (idiopathic); or secondary to some other lesion or disease. In primary cases there may be a bacterium, for which a congenial soil is prepared by exposure to cold and wet, overwork, poverty, alcoholism and the like. In secondary cases some such affection as pneumonia, tuberculosis, abscess, gangrene, cancer, pericarditis, hemorrhagic infection or wound of the pleura, has preceded the plastic inflammation.

Most cases of pleurisy with effusion, or sero-fibrinous pleurisy are either tuberculous or very frequently result in that disease; this is evident on autopsy (when tubercle formation is found), and from the tuberculin reaction, the bacillus in the exudate and the subsequent history of the case. The affection rather prevails in the fifth decade of life (40 to 50). Sero-fibrinous pleurisy appears more in men than in women; this is largely by reason of the more strenuous life in men, their exposure to cold and wet, intoxication and the occupation predispositions. Bacteria found in this lesion are the pneumococcus, staphylococcus (favorable cases), streptococcus (very serious); and generally the tubercle bacillus: as also the typhoid, Klebs-Lœffler, influenza bacilli, the bacillus of Friedländer and the bacillus ærogenes capsulatus.

In empyema or purulent pleurisy the infection may be from within (as in pneumonia, a septic focus, pus organisms, cancer or tuberculosis); or from without (as in penetrating wounds, fracture or œsophageal disease). Empyema may of course develop from sero-fibrinous pleurisy; here again we may find the bacillus of influenza, the strepto—staphylo—or pneumococcus. Apparently sterile purulent exudates are usually tuberculous.

Hemorrhagic Pleurisy occurs in tubercular pleurisy, cancer of the pleura, asthenic conditions, cirrhosis of the liver, chronic nephritis, malignant affections, injuries in aspiration, and hemorrhagic exudations; it occurs in effusion from rupture of new formed vessels, or from pleurisy secondary to pulmonary disease. *Diaphragmatic pleurisy* may be purulent; it is difficult of detection by reason of the meagre physical signs and of other objective symptoms. There is intense pain along the path of the tenth rib, with shallow, thoracic, quick respiration. In *encysted pleurisy* the effusion is "pocketed" by adhesions; and aspiration is essential to the diagnosis. In *interlobular* pleurisy the inflammation or sacculation is between two lobes; and here again the diagnosis is difficult.

In the treatment of dry pleurisy an initial hypodermatic injection of morphine (gr. ¼ with atropine) relieves the intense pain; Dover's powder and codein are also given to this end. Ice bags are applied; or the chest is strapped with long strips of zinc oxide plaster. The patient is put to bed; elimination is brought about by a mercurial followed by a saline, and diuretics. The diet is liquid. In sero-fibrinous pleurisy mustard plasters, or tincture of iodine (fresh) or other counter-irritants are applied. The ice bag is excellent; the Paquelin and leeches are recommended. Pleurisy with effusion requires counter-irritants to the chest wall over the region involved. Elimination by bowels and kidneys is essential. The diet is to be dry (unless there is marked temperature) and salt free. Iodide of potash and the salicylates are given internally. If such measures have not proved effective for fluid absorption, or whenever the effusion persists beyond a few weeks, we aspirate, especially when the fluid has approached the clavicle. Timely aspiration prevents possible spontaneous evacuation of fluid, subsequent fistulæ, contractures and bronchiectases. Neglect of timely aspiration may result in death by dyspnœa or through loss in absorptive power; or in subsequent phthisis and progressive asthma.

After giving a stimulant, such as whiskey or aromatic spirits of ammonia the patient rests his sound side upon an assistant; the hand of the affected side is drawn over to the patient's opposite shoulder. Under

strict asepsis the puncture is made below the angle of the scapula, or in the axilla, in the seventh or eighth intercostal space, close to the upper margin of the rib (so as not to wound the costal vessel); and a quart is slowly withdrawn by means of the Potain apparatus. A hypodermatic of morphine may here be indicated. The symptoms and dangers attendant upon aspiration are: pain, coughing, pneumothorax, subcutaneous emphysema, syncope, convulsions and possibly death from shock.

When the exploring needle gives us pus, we have of course empyema to deal with; we then exsect a rib and drain; if the patient is too weak we at least incise. This procedure lies in the domain of surgery; and it is absolutely necessary when the empyema has assumed unabsorbable proportions. Subsequently we do what we can to facilitate the expansion of the lung on the affected side. The abscess cavity gradually closes, partly by contracture of the chest wall, and partly by the re-expanded lung.

Pulmonary Apoplexy or Hemorrhagic Infarct is a localized extravasation of blood. *Etiology.* It is due to an embolus or to a thrombosis of a branch of the pulmonary artery; sometimes there is a thrombosis of a distant vein; this apoplexy may supervene upon valvular disease (rheumatism). *Pathology.* Infarcts are single or multiple; they are usually near the lung surface, and in the lower lobes; they are wedge-shaped, dark red, firm areas (walnut to orange-sized), the bases being toward the periphery. If the surface of the lung has been reached the pleura will be inflamed. The vesicles are distended with red blood cells. The lesions may subsequently be replaced by cicatricial tissue; or blood may possibly be absorbed; an infection-bearing embolus will induce abscess or gangrene. The embolus is found in the artery supplying the region involved. *Symptoms* may be absent; or there may be sudden severe pain, dyspnœa, chill and fever and hemoptysis.

Such *physical signs* as fremitus, dullness, bronchial breathing and rales may be elicited. The *diagnosis* is made by the history, especially of valvular disease. We differentiate infarct from pneumonia by the milder general symptoms and the hemoptysis in the former; and the pronounced physical signs in pneumonia. As to the prognosis: infarct is rarely fatal, for the circulation is generally re-established or fibrosis supervenes; there may however be grave sloughing and canitation The treatment is symptomatic. There should be absolute quiet, rest in bed; minimum diet; elimination; reduction of blood pressure (nitrites); opium if necessary.

Lumbar Puncture in the Diagnosis of Poliomyelitis is recommended by Dr. Simon Flexner in doubtful cases in order for a decision at the earliest possible moment. We are still very ignorant of the real extent of the epidemics of poliomyelitis. We need especially to learn the frequency with which cases of poliomyelitis that do not develop paralysis occur, and what the leading symptoms are in these instances, since the so-called abortive cases may be found to be the insidious means of the transmission of the infection. Besides there is a not uncommon form of anterior poliomyelitis which closely simulates epidemic meningitis. The Rockefeller Institute has frequently been called on to supply antimeningitis serum for the cases of anterior poliomyelitis, in which meningitic irritation was an early and prominent feature.

Lumbar puncture provides the one clinical method at present known for clearing up the diagnosis of typical cases of poliomyelitis or for determining the nature of the typical affection prior to the appearance of paralysis. Flexner does not know if the increase in lymphocytes in the circulating blood will suffice for the same purpose; but he does not believe it is necessary or desirable to defer lumbar puncture for purposes of diagnosis until a specific form of treatment is discovered. It would seem necessary merely to recall the great value of lumbar puncture as an aid to the diagnosis of tuberculous and other forms of meningitis, for which there are at present no specific remedies to justify the employment of the procedure. In order to arrive at a diagnosis by lumbar puncture laboratory knowledge is required, since the fluid secured must be submitted to microscopic and chemical examination.

Diphtheria Antitoxin.—Since the discovery of this most beneficent agency, and its introduction as a prophylactic and as an immunizer against diphtheria, the mortality from that disease has been steadily declining; American Medicine truly observes that no fact in modern medicine is more incontrovertible than this. France has the lowest diphtheria death rate by reason, undoubtedly, of her scientific use of this agency; in the United States failure to equal or to still further lower France's achievements points to two causes. This first is failure to accept antitoxin universally as an absolute specific for diphtheria. It now seems inconceivable that any intelligent person —and especially a medical practitioner—can deny the specificity of diphtheria antitoxin. One has only to compare the death rate without the use of antitoxin, with the death rate under its use, to be assured of the certain benefits from this absolute specific. Of course the tendency of the age is toward a declining death rate, irrespective of remedial measures. Many cities have during the past few years reported lower death rates from all causes. Modern hygiene and sanitation are accomplishing much in preventing mortality and promoting longevity. But in connection with no other disease is there such notable and absolute evidence of specific control by a definite remedy, as in diphtheria and its control by antitoxin. Consequently denial or repudiation of the effect of antitoxin is not only irrational—it is much too often simply blind prejudice. For a medical man to antagonize the use of antitoxin comes very near to wilful negligence; and the time seems not distant when failure to use antitoxin will impose criminal as well as civil responsibility. This will remove not only the first cause of our present inability to equal or better the French diphtheria record, but also the second and quite as important cause—the failure of many an American physician to use antitoxin properly. The French physician, on the whole, exceeds us in the promptness and heroism of his treatment, he studies his patient, notes the particular virulence of each individual injection and adjusts the amount, frequency and method of use accordingly; he has a wholesome fear of diphtheria, but not of antitoxin. He recognizes certain dangers (as part of all forms of internal medication) but knows these are as

nothing compared with the graver dangers of the disease itself. French antitoxin is no better or safer than that prepared in America; indeed our product is perhaps more potent, more uniform in unit strength, and more free from after-effects such as rashes. Therefore the American physician should be less apprehensive than his French colleague need be.

But many American physicians, whilst implicit believers in antitoxin, fall short of securing the results they should by reason of timidity in the use of proper dosage. The bugbear of an occasional antitoxin eruption has obscured the much graver dangers of diphtheria itself. The American death rate from this disease will never reach the low point it should until we use antitoxin as promptly and as freely as experience and the results justify.

Psychanalysis and Interpretation of Dreams.—Dr. E. W. Scripture delivered an address upon this and kindred subjects before the Academy of Medicine and published in the Medical Record, December 24, 1910, from which we quote the following:

"Of what use is psychanalysis? In the first place, it gives us a method for investigating the subconscious. Our mental life shows itself to us as a series of concious thoughts; what we know directly of ourselves we say is consciously known. But the direction of our concious thoughts is largely determined by our entire past history stored up somewhere outside of consciousness. The sum of these outside influences we term the "subconscious." For example, if I pronounce the word "hate" each of you thinks of something different. The entire sum of forces involved outside of the word I pronounced and outside of the present scene belonged to the subconcious. Some slight attempts have been made to get at these subconscious processes by the accurate methods of experimental psychology, but the laboratory men have not yet become interested in the work. Freud has found a set of methods that for the first time reveal clearly the fact and laws of the subconscious. The results show a remarkable fixity and uniformity; over and over and over again one patient after another reveals the same typical condition till finally you can guess most of his story by the time he has begun it.

In the second place, psychanalysis enables us to cure a large number of persons that cannot be cured by other methods. Many cases of hysteria may be cured by hypnotic suggestion, but this proceeds by curing a symptom without understanding the disease. The better way, and in many cases the only way, consists in finding the cause of the disease. The cause lies always in some suppressed emotional experience in the past; it can be found only by psychanalysis. Exactly the same statements are true concerning the various psychasthenias and anxiety neuroses. As the patient learns his own mental mechanism by analysis, he finally recognizes the emotionalized idea that causes his trouble. The disease arises from the suppression of this idea. As soon as it is dragged forth the trouble disappears. The psychanalysis is therefore the method of cure.

In the third place, the method is of immense value in correcting unprofitable mental attitudes. Children often grow up with distorted ideas of their surroundings; in many cases they never succeed in making a proper readjustment. By psychanalysis such weak spots in one's mental adjustment become clear, and a readjustment gradually follows. The revelation to the egocentric patient referred to above (dream of the station-master) was followed by a marked change in character. The method is applicable in every case of defect of character, such as in bashfulness, timidity, obstinacy, temper, greed, etc.

Ulcer of the Duodenum.—Duodenal ulcer has been described as arising in several ways, with the French, beginning with Bucquoy in 1887, and the writers who characterize the disease as often latent and commonly confused with gastric ulcer, with signs, however, of melœna, appearing suddenly in the midst of health, or by equally sudden intestinal hemorrhage. Dienlafoy has especially studied the latent forms in the first series of his "Lecons Cliniques de l'Hotel-Dieu." 2. The Anglo-American doctrine, as given by the Mayo brothers and by Moynihan show that duodenal ulcer may be frequent, especially among men, and that out of 100 cases of obscure ulcer 95 per cent. are duodenal. There is produced at the same time a gastric hypersecretion. Now it is also shown that what is called *liquid á jeun*, or fluid in the fasting stomach, as in the morning, will be found and the term syndrome of Reichmann is given when to this we find cyclic attacks of pain radiating, and quieted by eating. The cycles of pain may exist for from 15 days to several weeks.

Duodenitis has been a classic cause of icterus, says Mathien in the Journal des Praticiens, 24 December, 1910. He continues by reporting such a case due to duodenal ulcer, which came to operation, and in which the diagnosis was exactly confirmed. Mathien believes that the surgery of duodenal ulcer is much more urgent than that of gastric ulcer, and, he adds, gives very satisfying results.

Depopulation of France.—Jayle shows how in France the advantages of country-week, of special care, and indeed all the choice things for distribution go systematically to the less favored physically. So that the strong and healthy ones of the race are made to suffer for the want of just the little help which would mean so much to them, while many who could not benefit (appreciably) are given the good things! We see millions of dollars spent on criminals, on paupers and on deformed. How many a normal boy or girl would rejoice in even a portion of this as a step to the accomplishment of some ideal. Does it seem probable that too soft-hearted a manner of attack may lead to racial degeneracy? But the real error in our method is to be seen: while aiding the criminal, the pauper and the deformed to regain, even in a little, the physical plane his more fortunate brother lives upon, we should try to assist the weakling to develop those special productive qualities which each one possesses. Society would thereby profit. Simple racial productivity is not the sole essential. But by restoring a balance among accessory faculties, the progenitive power will become equalized. The peculiar and unnatural safeguards which are thrown around youth in France may account for suppression or perversion of the just sexual impulse. France is the land of the "dot," we must remember!

Yet in France marriage is carefully "regulated" by parents, and it is a custom not to allow a youth to speak with his fiancee, alone, before they are married. Convents and schools separate the sexes thoroughly, until marriage. The sexual impulse is taught to be one that requires restraint, and that it is an expensive one, and that children cost money! Moreover, the method of choice of a wife is one in which a good "dot" appeals to the parents. All this should be pondered over. France may find that nature is going to be heard, and that Love, despised, will call upon Nemesis.

The Cause an Effect.—While the evidence is cumulative showing that chemic deviation is the cause of neurasthenia and other disorders of the nervous system, it would be fallacious to assume that it is a cause *de nova*. Hence, the inquiry: What is the cause of the cause? This finds a very complete solution in a study of the various problems connected with metabolism and disorders of nutrition — which develops the fundamental basis—impairment in assimilation, primary and secondary, leading to acid excess with depletion of the lime content and coincident or consecutive invasion or deposit of magnesium salts, so that we have to deal with magnesium infiltration as an effect of disordered metabolism. As to treatment, the original proposition still holds good:

(1) Restore the digestive capacity;
(2) Neutralize acid excess;
(3) Promote magnesium dissociation.

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The Middle Turbinate should be removed, states A. H. Andrews (Penn. Med. Jour., Sept., 1910), in the following circumstances: When there are polypi springing from or recurring in its immediate neighborhood. Chronic disease of any of the anterior group of accessory cavities, especially when the turbinate itself is diseased, or when it lies so close to the lateral wall as to interfere with drainage, ventilation or with examination of these cavities. Disease of the sphenoid sinus or posterior ethmoid cells, when it may be necessary to remove the middle turbinate in order to facilitate the treatment of these cavities.

There is at present much difference of opinion regarding the treatment of the following conditions: Pressure between the middle turbinate and some of the surrounding structures, especially when associated with headache or pain in the eyes not otherwise accounted for. A persistently red and inflamed or hypertrophied turbinate, especially when the other parts of the nasal cavity appear nomal; this condition is frequently associated with the same class of head and eye symptoms. A large and inflamed turbinate, probably of the bullous variety, without reflex symptoms. The persistent appearance of a purulent or mucopurulent discharge under the turbinate, the source of which cannot be located when the turbinate is pressed upon by a small circumscribed deflection of the septum, with plenty of room below for the passage of air. A sensation of nasal obstruction when there is plenty of breathing space below, but occlusion of the upper air passage by the middle turbinate. Atrophic rhinitis affecting the lower part of the nose, with an enlarged and inflamed middle turbinate.

To Mitigate Poisoning in Trades.—It was indeed a commendable action, that of the Diamond Match Company, to throw open its patent to the use of all manufacturers. The object of this patent is to make "parlor" matches without exposing the operatives to the dangers of phosphorus poisoning. It should be a matter of course that if one concern had the only safe chemical combination for making matches, and had patented it the question of its exclusive use or of demanding royalties upon it should never come up; where the humane consideration is so easily superior to the commercial, it ought to be made determining. Physicians are not allowed by the ethics of the profession to patent any improved surgical instrument or other device that means an aid to health; and where industry or trade plainly touches the physical well-being as in the case of matches that cause working men and women to get "phosphorus jaw," those responsible for its management ought to be as sensitive and as ready to make sacrifices as the medical profession.

Some Newspaper Marvels.—Under the caption, "A New Marvel in Medicine," remarkable and almost instantaneous cures are reported by the lay press in severe cases of tuberculosis, pneumonia and typhoid fever at South Pacific Hospital in San Francisco. The cures are based upon the principle that "the bacteria throw off certain substances while growing—poisons that are exuded to preserve the organisms' life;" and the idea is that "if these exudations could be formed into serums capable of injection into human systems affected by disease caused by like bacteria, it would have the effect of immediately (sic) arresting the bacteria's growth." Working on this principle many astonishing cures are reported; for example a tuberculosis patient was pronounced cured within four days after the application of the remedy. "Conservative practitioners are astounded by the results accomplished." Wonderful hustlers, those far western practitioners!

Deaths in the Streets.—Among the perils of the cruel city are deaths by being crushed under vehicles. Of 218 persons killed in Manhattan Borough by vehicles in 1910 (almost double the number of all ages killed in 1900) ninety-nine were children under 14 years old, as compared with 31 children killed during the first year of the decade preceding 1910. The population of Manhattan has not doubled and trebled in ten years, but these figures evidence that the dangers in its streets have doubled and trebled in that time. More than twice as many children were killed by wagons and twenty-five times as many were killed in 1910 by automobiles as in 1900. Of course not many of these treacherous vehicles were driven through the streets a decade ago, when only one child was killed by such agency in this borough; but the figures should be significant to parents and teachers, and possibly also to the municipal authorities.

Elimination of Hexamethylenanime by the Mucous Membrane of the Middle Ear and Nasal Sinuses.—Barton, in the Boston Medical and Surgical Journal of June, 1910, draws the following conclusions: (1) Hexamethylenanime is eliminated by the mucous membranes of the middle ear and accessory nasal sinuses. (2) Judging from the limited data at hand, it would appear that the drug is of considerable value in cases of acute suppurating otitis media and sinuses. The chronic forms are apparently benefited. (3) Upon a

priori grounds it may be fairly assumed that hexamethylenanime may prove to be a valuable prophylactic in those diseases commonly attended by otitis media; perhaps also a rophylactic to be used prior to surpical operations upon the middle ear, the mastoid, and sinuses of the nose.

Calomel in Pregnancy. — S. Cales (Therap. Gaz., Oct., 1910) promotes elimination in pregnant women by the use of calomel, which (he considers) acts upon all the cells of the body, effecting the removal of cellular waste, and stimulating also the liver and kidneys. 1-20 to 1-10 grain is given three times a day for ten days of every fortnight throughout pregnancy. Trituration of this drug with sodium bicarbonate increases its action and lessens the danger of salivation. This treatment is especially appropriate when elimination is deficient (as indicated by headache, slight digestive disturbance and diminution of urea and solids in the urine). In less than a week these symptoms will disappear; the patient should then discontinue the powders or tablets until she again feels the need of such medication. Calomel should not be employed in large doses as a purgative, during pregnancy; it cannot be eliminated freely after accumulation and may have to be stopped before it does its work by reason of salivation.

Appendicitis in Children, states I. Wood (Canada Lancet, July, 1910), is much more frequent than is generally supposed—seven times more frequent before fifteen, than from the fifteenth to the thirtieth year. A large percentage of cases are not diagnosed, or they are discovered too late for successful treatment. The current literature of appendicitis should be revised and the features of the disease peculiar to children should be made clear. The "diagnostic sense" should be awakened and trained to recognize the initial symptoms. An early liagnosis is imperative; and operation should follow immediately.

The Ability to Discriminate Between Colors is a safe test of intelligence, in the opinion of Dr. Warburg, a Cologne physician. In his experiments colored yarns of various tints and shades were pinned upon cards and placed before school children, who were asked to designate each color by name. In all 1,800 children of various ages were subjected to the test. Dr. Warburg's opinion is that the result furnishes conclusive evidence that color perception is acute or dull in proportion to the degree of the pupil's mental development. The percentage of correct answers rose from class to class and was invariably highest among the most intelligent children. It was found not only that the eye is more sensitive to certain colors than to others, but also that the relative degree in which different colors impress the mind is definitely ascertainable. Thus Dr. Warburg has been able to draw up a color scale, grading hues according to the strength of the impression they make. White and black are the easiest colors to recognize, red, yellow, green and blue follow in the order named, though blue is much harder to perceive than green. Of another class, and far more difficult to recognize, are brown, gray and violet. The perceptive power of girls is much more acute than that of boys. The result of the tests confirms the testimony of statistics which show that two-thirds of all cases of color blindness are among men.

Aortic Aneurism is generally fatal; spontaneous cure is rare. A. A. Eshner, (Am. Jour. Med. Sc., Oct., 1910) finds treatment only palliative, relieving symptoms and prolonging life. Ligation is generally inapplicable. Among other procedures is the introduction of foreign substances, with galvanism. Eshner has found wiring, with electrolysis, satisfactory in a majority of his cases. This safe and simple procedure is applicable, however, only to sacculated and not to fusiform aneurisms; among thirty-six cases gold wire was used in sixteen, silver in fifteen, steel in four and silver plated copper wire in one. Four of these patients lived a year after this operation, which is especially suitable when other means have failed — especially when symptoms are alarming and when rupture is threatened. This method of wiring has resulted in amelioration of symptoms and prolongation of life; in some cases it appears to have hastened the fatal issue. The technique: Under asepsis a hollow gold, silver or platinum needle, insulated except at the tip, is introduced into the most prominent part of the aneurysmal sac, puncture of the opposite vessel wall being carefully avoided. Through the needle sufficient gold or silver wire is fed to fill the sac loosely —from ten to twelve feet. Should the wire kink before so much is introduced, the needle is withdrawn and introduced in another point; or a second needle is introduced. The end or ends of wire are then connected with the positive galvanic pole and a current is introduced increased gradually to 60, 80 or 100 milliamperes, over a period from one to one and one-half hours, The negative pole is placed at some indifferent point, as in the back.

Among "Universal Hair Growers" the most recently discovered is a trip to the Arctic regions or (failing time and inclination for such a jaunt) employment in a cold storage company. It is Sir Ernest Shackleton who thus recommends extreme cold as one of the best means of strengthening the hair. He found that almost all who went with him on his Antarctic expedition possessed stronger crops of hair on their return to civilization; as his party neared the south pole their hair grew more slowly but became thicker and stronger. An official of a London cold storage company, questioned on this subject by the ubiquitous interviewer, stated that he had not a bald-headed employee; his men worked all day in a temperature of 20 degrees of frost and the cold undoubtedly made their hair thicker.

Calcio Phosphate of Uranium, a new radioactive substance, is said to have been discovered by Dr. Churchward, of Norwood, England; it will have at least the advantage over radium in being less expensive. Though its properties have not yet been fully established, it has given sufficiently good results to justify the expectation of its use in general practice. This substance is light-brown, with coruscating patches of green where the radioactivity is present. Some specimens have little or no radioactivity. Those owned by Dr. Churchward came from Portugal. Some ore has also come from Australia. Its cost is perhaps one-millionth that of radium—and this is a momentous consideration for most practitioners. Churchward considers he has cured rodent ulcer; and that he has used it successfully in one case of tuberculous cervical glands, and two cases of cancer. The exposure has to be much longer than with radium bromide; to cure a bad ulcer takes 348 hours of exposure. Here the length of time is balanced by the cheapness of the agent.

MISCELLANY

Clean Soap Suds are stated to be as destructive to bacteria as a 1-2000 bichloride solution.

The Heaviest Man in the United States, who is said to have weighed 450 pounds, Samuel Harvey, died recently near Pittsburg, Pa., of cerebral apoplexy. His medical namesake, though of lesser avoirdupois, was probably of weightier mentality.

Health Conditions in Panama are much improved over those of the preceding year, reports Col. Goethals; no case of plague or yellow fever originated on the isthmus during 1910. The daily average of sick was 23 per 1,000 employees, as against 23.49 during 1909, and the total number of deaths among employees in 1910 was 548, equivalent to 10.84 per thousand.

The Mouths of Alcoholics seem to be especially alive with bacteria that are likely to invade the lungs; and the mucous membrane of this region makes good soil for the cultivation of the tubercle bacillus. Besides, neurasthenics and hysterics augment the number of dipsomaniacs whose feebleness increase phthisiogenic activity; the latter are thus a social peril by reason of their dissemination of the infective material of tuberculosis.

Dyspnœa in Tuberculosis.—When the lesions are far advanced this is a grave and pitiful symptom, most difficult to treat. Inhalations of oxygen may give relief. Hoffman's Anodyne, in doses of from one-half to one teaspoonful in water or wine is oftentimes effective. A mixture of camphor and acetic ether (1-10) gives much relief if inhaled continuously. Camphor in oil of sweet almonds (1-10) may be given by hypodermic.

Electrical Amputation by the high-frequency current has been advocated by Prof. J. A. d'Arsonval, of the College of France. In experiments on animals he is reported to have deduced the possibility of raising the temperature to a very high degree and apparently without pain to the animal under experimentation;" after some days the members so treated fall away, leaving the stumps perfectly cicatrized.

Place aux Dames.—Dr. Maud Glasgow has initiated a movement to get women admitted as internes into the larger hospitals of the metropolis; it seems there are now but two smaller hospitals in greater New York to which women can be admitted as internes.

Court Room Atmosphere is generally redolent of moral impurity; in addition a medical inspector for the New York State Department of Labor has found in two cities of court room air aspirated through an aerobiscope 27 colonies of bacteria and 5 moulds. A careful isolation of the bacteria showed many pseudodiphtheria bacilli, and many of the Klebs-Loeffler variety; also bacillus coli, tubercle bacilli and non-pathogenic cocci.

A Tuberculosis Tax Plan.—David Lloyd-George, the Chancellor of the English Exchequer, in a letter to the novelist Hall Caine (who resembles Shakespeare in appearance, if in nothing else, and who has been advocating Government measures against consumption, principally through the State taking charge of all such sufferers) announces that he has been considering this problem in connection with his forthcoming scheme of invalid insurance. The Chancellor expresses himself as hopeful of doing something to arrest the terrible scourge, "whose livid wheals are deeply marked on the face of Great Britain."

The Hair of the Dead from Plague.—It was recently reported from St. Petersburg that German agents in Manchuria were shipping quantities of the hair of plague victims to Europe; and that bodies of the dead found in the streets were invariably without queues, which were cut off to supply the market for false hair. It is asserted that the British Local Government Board would not interfere with the importation of such hair into the United Kingdom, believing that the germs of the plague can be conveyed only by living persons.

The Founder of the Red Cross, Mr. Henri Dunant, who died in Switzerland in his eighty-second year, was in the battle of Solferino in 1859, when he observed the needless suffering in war. He then initiated an agitation which lead to the international conference in 1863 which was followed by the Geneva Convention a year after. Articles were then adopted and eventually signed by forty governments, "for the amelioration of the condition of the wounded in armies in the field." The Society of the Red Cross was thereupon established, to carry out the provisions adopted at the convention.

The Tubercle Bacillus is seldom communicated in the marital relations, considers S. Arloing, of Lyon, on the contrary the parents often transmit a certain functional debility which more or less retards postnatal development and which predisposes the organism of the offspring to bacterial attacks. Tuberculosis in the mother, or in the mother and father simultaneously, seems especially likely to be followed by such functional debility in the infant. It is difficult to prove experimentally a real native or hereditary predisposition to tuberculosis; yet it is demonstrated that the descendants of consumptives are more sensitive than other subjects to certain effects of tuberculosis, and show more frequently than children born of normal parents a notable proportion of agglutinine in the blood serum.

Race Conservation in Georgia.—Married couples at Fort Valley, in Georgia, have formed a voluntary mutual benefit society, numbering five hundred lodges, with the following privileges: When a husband dies after the birth of a living child, the wife is awarded $1,000; and when a child is born, the parent, either mother or father, receives $100, the certificate of benefit maturing with a survivorship reward of from $700 to $1,200 according to the number of children born since its date of issuance. These awards are on the basis of membership fees and monthly and annual dues. The plan seems to be favored by newly wedded couples in Georgia; for it is reported that they all belong to the society, now but a few months old. Insurance actuaries would consider that the foundation of societies of birth and parentage insurance and pensions is perfectly feasible on a statistical basis; the incidence of births can be figured out for certain specified groups quite as readily as the incidence of deaths, accidents or sickness.

THE PHYSICIAN IN COURT.*

BY R. LINCOLN GRAHAM, M. D., NEW YORK CITY.

PROBABLY there is no place where the physician receives such slight respect and frequently such disrespect as on the witness stand, nor can it in truth be said that this condition is entirely unmerited, for, as a rule, we physicians have resigned ourselves to the field of probabilities, while in Court we are transferred into the field of facts and certainties.

The physician in diagnosing and treating his cases conscientiously must be open to convictions of error both as to the present condition of his patient and to the developments and complications that may arise. It has been the frequent experience of all of us physicians that the unexpected develops. It is needless for me to elaborate upon this fact because this is a matter of everyday occurrence.

The question of "How do you testify, Doctor?" frequently has been put to me and the answer has been, "I testify to my physical findings as facts, I testify to my conclusions based with reasonable certainty upon my physical findings. Such testimony meets the approval of our Courts, that is, they desire facts and certainties.

The physician in his professional capacity is called upon to testify in two classes of cases, to wit: criminal and civil cases, but the former class is so exclusively handled by expert alienists, chemists and pathologists, that it is extremely rare that the practitioner is called upon to testify in questions of crime.

However, it is the everyday experience of most of us to have an accident case or to be confronted by a case of mental aberration and it will be largely to these classes of cases, I will direct your attention to-night.

There is absolutely no excuse for the physician shirking his duty to his patient by avoiding the giving of testimony that will aid the jury in arriving at a fair conclusion of his patient's claim. Because certain corporations have established a system of insinuating and insulting questions for their attorneys to ask is no proper excuse for the physician to keep away from Court when he might be of assistance in securing justice.

While it is true that at times the Court seems to place no restriction upon the insults offered to physicians while on the witness stand when being cross examined by legal representatives of some corporation, or the representatives of relatives or friends of the alleged incompetent and also that the Court apparently stands ready to punish the physician for contempt if he endeavors to defend himself, yet it is nevertheless true that this very humilation that these attorneys attempt to put upon the physician's testifying against them is a means used to prevent the physician testifying in behalf of their patient.

Let us take a typical accident case and carry it along until termination. Apart from professional attendance there are certain obligations that the physician is called upon to perform. First of these is his report to the patient's attorney. Such a report should contain sufficient data to refresh his own memory before going on the witness stand and also such data as to enable the attorney to properly draw the complaint and furnish the bill of particulars. The form I have adopted has met with satisfaction in all my cases and as it is simple and comprehensive I believe I am justified in advising its use.

The divisions are: Patient's allegations; physical findings and Bill of Particulars.

Under the head of patient's allegations the data consists of simply what we would term the history of the case.

Under the head of physical findings, the data consists of the facts of our eyes, ears, touch, smell and even taste reveal to us; not our conclusions but the facts that prompt those conclusions.

Under the bill of particulars, the data consists of conclusions or diagnosis based upon the patient's allegations and our physical findings. These conclusions should not only contain a description of the injury but also the manner and extent of its effects upon the patient as to its duration, curability or permanency.

Such a report meets all the requirements. It provides the attorney with a guide to the subjective symptoms obtainable from the patient's allegations. It furnishes to you a refreshment of your memory of the objective symptoms obtained from the physical signs and enables you to testify to facts. It gives the attorney such data as he requires in his complaint and bill of particulars.

In a very large percentage of the cases the attending physician is called into the field of expert testimony and he must then discriminate very carefully between subjective or hearsay evidence and physical facts, and, in so far as is possible, he must exclude all hearsay testimony and when unable to arrive at a conclusion without the subjective symptoms, he must testify that he is taking the subjective symptom or hearsay evidence into consideration and then it is a question of the ruling of the presiding judge whether the testimony will be admissible or not.

Frequently the subjective symptoms are combined with the physical findings in a question with the addition of the assumption that the subjective symptoms are true, and under these circumstances we may base our conclusions on all the facts set forth in the question.

Let me cite a recent case which will more clearly illustrate my meaning:

An old lady received a blow on the left side of her head being struck by the pole of a double team truck. Upon direct testimony the specialist stated that he had made various tests both with watch and fork and that he found her to be deaf in the left ear; that he treated the ear for some months and from his observations he could and did state that her deafness was permanent. The cross-examination was as follows:

"Doctor, how do you know she was deaf in the left ear?

Answer: She told me so.

How do you know she wasn't lying?

Answer: I don't know."

The result was that part of his testimony which related to the deafness of the patient was stricken out of the evidence. Later the plaintiff's attorney cleared up the situation by asking the doctor if the physical condition of the plaintiff was a competent producing cause for deafness and left the fact of the truth or falsity of her deafness for the jury to decide.

However, there are certain conditions where it is absolutely impossible to arrive at a reasonably certain

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conclusion without the consideration of the subjective or hearsay symptoms in conjunction with the physical manifestations. This is very largely true in the various neuroses following an injury, especially where the lesions are purely functional and vary at different times and circumstances. It is a well established fact that there are no definite diagnostic symptoms of many of the post traumatic neuroses and that in diagnosing these cases we must consider all the manifestations and then frequently take into consideration the subjective symptoms as well. In a large proportion of these cases the patient will inform us that at times she suffers from one ailment and that at other times from a different condition and that there is seldom any constant symptom, while the very fact that the experiences of the patient are varied is to be considered in making our conclusions.

In this class of cases before the trial of the case, I believe it is strongly advisable that the trial lawyer be informed of this fact so that he may put the question to you in a manner that will enable you to testify with reasonable certainty. I frequently direct this method of procedure, to wit:

After the physician has qualified, the counsellor states: "Doctor, the plaintiff has testified, etc. (stating all her subjective symptoms), now when you answer my question I want you to have in your mind and consideration, the assumption, that these facts she has testified to are true and to base and guide your answers upon this assumption."

While the testimony based upon such assumption is not of the weight that it would be if based solely upon physical findings, that it is the best that can be given with reasonable certainty under these conditions and it puts more boldly to the Court the consideration of the plaintiff's veracity.

In a recent case where the injury alleged was traumatic neurasthenia, the defendant's physician, unquestionably an able diagnostician, testified from his examination, he could say that there were no evidences of neurasthenia present in the claimant at the time of his examination.

Upon cross-examination, he was confronted with a selection of Dana's work which read to the effect: "A great many of the symptoms found in this class (traumatic neurasthenia) are subjective," and again by the selection from the same work: "There is no one diagnostic symptom of neurasthenia."

After being grilled on the stand relative to the fact that the symptoms testified to by the plaintiff were those of neurasthenia, his testimony was reduced to the bare fact that he based his conclusion not solely upon his physical findings, but also on the fact that he believed the claimant lied to him. In this case the damages to my mind were excessive and I believe solely so because the expert had erred in the manner of basing his conclusions and had given the jury the impression that he had deliberately misrepresented the facts to them.

The first questions put to a physician on the witness stand are relative to his qualifications and in this matter I believe it decidedly unwise to appear boastful of your achievements or position, but rather display a moderation and reserve, for the higher you pose the greater will be your fall, if you fall, at any point, throughout your ordeal on the witness stand to maintain the high standing you have set for yourself. I believe the jury give more weight to your demeanor and the knowledge you display on the stand than to any personal claims for your professional greatness.

In all probabilities the next questions put to you will be relative to your seeing and attending the patient and right here let me emphasize that in all cases of accident or injury, examine the whole body and where modesty does not absolutely prevent, strip the patient nude. *Thoroughness of detail is the one salvation of the physician on the witness stand.*

To illustrate this fact I will recall the experience of a prominent gynecologist residing in the Brooklyn Borough and testifying in the capacity of an expert for the New York City Railway Company. On the direct examination he was decidedly positive and assertive in his statements. The cross examination was as follows:

"Doctor, you examined this woman in my office, did you not?

Answer: Yes.

While she was lying on the floor?

Answer: Yes.

She was fully dressed?

Answer: Yes.

She caught your hand and struggled against you and cried and squirmed away from you, did she not?

Answer: Yes.

Did you consider that a satisfactory examination?

Answer: No.

Do you presume from an unsatisfactory examination to tell this Court and jury what the physical condition of this woman is?

Answer: No.

You are not satisfied that you know anything at all about this case, are you, Doctor?

Answer: No."

On this occasion, I have learned, that this physician's humiliation was so keen that he now refuses to treat an accident case.

After the patient has stripped, observe him standing, walking, his backward movement, his forward and his side movement, the appearance of his skin, his muscle and if there be any bony or muscular deformity; get out your steel tape measure and compare it with the opposite side. Never use a linen or paper tape measure, for the fact that it may be stretched, destroys the weight of your testimony. Exhaust every possible means to arrive as near to positive certainty as possible; for instance, in the case of an abortion following an injury, go thoroughly over the glandular system and have a Wasserman test done in your presence or do it yourself to eliminate the question of syphilis, for probably the first cross-question put to you would be: "Doctor, has this plaintiff syphilis?"

I also believe it to be of decided advantage to have some standard medical work that coincides with your method of treatment and upon leaving your office to go to Court to take such authority with you. In the case of Myers vs. Holtz, I was bitterly assailed for having used a plaster of Paris cast in a very severe sprain of the ankle joint with separation of the external ligament, and the defendant produced six physicians who on the witness stand swore upon direct testimony, such treatment as I had used was bad and unscientific. They were forced to retract their statements when confronted by Dr. Bull's Treatise on Surgery and his

statement that he and Dr. Von Bergman considered fixation with plaster of Paris the best treatment in such conditions.

Upon direct examination stick closely to your physical findings. State what you did and observed—avoid what you said or heard except in that your hearing was a physical sign. You may testify that the patient had the moan of pain; the facial expression of agony, the pallor of shock, the deep lasting groan of labor; but you cannot testify that the patient complained of pain or had pain, for these are subjective symptoms or hearsay testimony.

A good rule to follow is to state where the examination was made, whether the patient at the time of the examination was in bed, on a couch or chair, bleeding, conscious, shocked, the location, the nature of the physical findings, discolorations, swellings, luxations, bony deformities and separations, also what you did and how you did it and when you have gone this far, *stop*.

If the attorney follows the customary course of examination you will then be asked where and how often you saw the patient. In this respect it is most certainly wise to have prepared yourself by reference to your account books as to the dates of your visits, preparatory for such question, in fact, if you use one of the pocket day books, commony used, it would be wise to slip the book into your pocket so that you can refresh your memory while on the witness stand.

When giving testimony, avoid as far as possible all technical terms. Use the simplest expressions. When speaking of bones, designate them as bones of the forearm, thigh, leg, spine. Don't say uterus, but instead womb; don't say synovitis, but joint inflammation; don't say subluxation, but loose joint. Don't say atrophy, rather shrunken or wasted; don't say Anchylosis, but stiff joint.

Be careful about volunteering any information. No matter how honest and unprejudiced your intentions are, any elaboration or unnecessary information is usually construed as undue interest and even though stricken out of the testimony, it lessens the weight of your evidence with the Court and jury. Be careful not to assume the prerogative of the trial lawyer by leading or suggestive statements. Such testimony as he may desire he will bring out in the course of time and if he does not question relative to all the facts you are aware of, it is wise to conclude that no testimony is needed on the matter. Let your answers be descriptive and comprehensive. An illustration of this will probably convey my meaning.

It was the uniform custom of one of our most successful corporation lawyers to ask this question of physicians:

"What is anteflexion?"

The careless or unsuspicious physician would answer: A bending forward of the uterus.

Is this a diseased condition, Doctor? Answer, yes.

Sure of that, are you? Answer, yes."

Thereupon the attorney would bring out Dr. Alexander Skene's work on Gynecology and have the physician admit that Dr. Skene was a very competent authority on diseases of women. When he had accomplished this fact, he would promptly turn to a marked paragraph and read out of Dr. Skene's work this clause:

"The normal uterus is bent somewhat forward." And then ask the witness if he agreed with this statement. If the doctor agreed, then would be thundered at him: "If you now believe the normal uterus is bent upon itself, why is it you did not do so before I read to you what Dr. Skene said on the subject?"

By being comprehensive and descriptive I was able to avoid such embarrassment under a similar circumstance. In answer to his question "What is anteflexion," I replied: "It is a bending forward to a pathological extent of the womb upon its long axis."

Do not take anything for granted and while your answers should be brief, make them complete so that there are no omissions that offer opportunity for the opposing attorney to humiliate you by displaying your laxity. Do not be too scientific in your answers. Rather condense your knowledge to simple facts and express them in simple terms.

In this respect, I recall an experience where the late Dr. George R. Fowler was asked what was appendicitis. The next hour was one of weary torture for the Court and jury as this learned surgeon discussed scientifically the causes, pathological changes, termination, etc., of this affliction. The weary lawyers on both sides declined to ask any further questions of the doctor for which it can be easily deduced the Court and Jury were indeed grateful. The doctor who followed Dr. Fowler on the stand was familiar with the requirements of a trial and answering to the same question said: "It is inflammation of a small blind gut located in the right groin and attached to the main gut."

When you have passed this part of the testimony which treats solely of physical facts and arrive to where you must state your conclusions, it is necessary that you pause a moment after each question before answering. This is to give opportunity for the opposing attorney to offer objections to the question. If no objection is offered answer the question; if offered do not answer unless the judge overrules the objection. If he sustains the objection, you must be careful not to answer it. If you answer the question in spite of the objection being sustained, you would probably imply an undue interest in the case and are liable to be punished for contempt of court. Again, do not argue with the court, and as far as you are concerned, accept the decisions of the presiding judge as final. And no matter how biased and unjust his decisions may appear to you, they are matters of record and subject to the supervision of the judges of the higher courts.

This does not mean that you are to blindly testify at the direction of the court: Frequently you will be directed to answer the question, yes or no, and it is a common trick for an attorney to request the judge to direct you to answer the question yes or no and then put the question in such form that yes or no would not be a proper answer. Let me illustrate.

In the case of Pott's fracture, the attending physician had stated that after reduction he had encased the joint and limb in plaster of Paris. The presiding judge had admonished me to answer the question "yes or no;" whereupon the defendant's attorney put this question: "Doctor, will you say it is proper treatment to put a broken bone in plaster of Paris?" Had I said yes, the next question would be: "Doctor, tell us how you would put the Ethmoid bone in plaster of Paris?" Had I said no, then would have been thundered at me: "Ah, so that attending physician did not use the proper

treatment in this case?" In this case, in spite of the threats of the presiding judge to send me to jail and the ten minutes' expression on his part of my numerous wicked, vicious and malicious threats, I persisted in saying, "I cannot answer this question."

When it dawned upon the judge that the question was lacking in completeness, he immediately corrected the question to "instead of a broken bone, to a fracture of the character and location of the one from which the plaintiff suffered?" To which I answered, yes.

Another common question to ask upon cross examination is this:

"Doctor, when you had finished treatment, the patient was completely cured, was he not? Otherwise you would not have discharged him, is that not the fact?" Because the process of repair has progressed to completeness in a fair proportion of cases, does not mean cured. True it is that abrasions, lacerations, bruises, certain forms of shock, moderate sprains, some forms of fracture and dislocations are practically cured with no material permanency or appreciable results, but the physician must take into consideration whether or not completion of the processes of repair have not left a stiff joint, a shortened limb, a weakened muscle or some permanent defect before he goes on record as saying his patient made a complete recovery.

In a recent case tried in the Supreme Court of Brooklyn, the attending physician on behalf of the defendant Railway Company, testified that the boy had made a complete cure of his fractured elbow, and upon cross examination, had the humiliation of displaying a badly anchylosed and deformed limb and of making measurements which showed an inch and a quarter difference in the circumference of the two elbows.

When testifying to the incidents and facts not clear in your mind, always put the addition "to the best of my knowledge and belief" to your answers. An error of memory is no crime and it also enables the jury to give the evidence its proper weight. I was asked by the presiding judge on one occasion to define just what I meant when I said belief, and my answer was; "my conviction based with logical reasoning upon all the circumstances and facts considered." It is better to use this additional provision where there can be a matter of possible doubt.

Dr. S. W. C., a thoroughly conscientious practitioner, in the Supreme Court, upon cross examination was asked by the railway attorney if any of his family at any time had ever had a claim against any railroad or any railway or was ever injured in a railway or railroad accident. His answer was no, and upon further examination, he persisted in the assertion that there never had been any such claim or accident. The railway attorney then produced documents which showed that the doctor's wife five years before he had married her, had received a small settlement from a railroad. Evidently his wife had considered the matter of such minor significance that she had never informed her husband of that fact.

You must not lose confidence in yourself because your testimony is met by the opposite side with flat denials of the conditions you have testified to. In a very large percentage of cases, you will be confronted by directly contradicting medical testimony. While there may be an honest difference of opinion upon the part of the physicians there cannot be any honest difference of facts and if your facts are precise and thorough it is an easy matter for the attorneys to locate the truth or falsity of the relative statements.

This was illustrated in a case tried in the latter part of October of this year. On behalf of the plaintiff I testified that among my physical findings there was an approximate difference in the circumference of both elbows of 1¼ inches. The defendant's physician flatly denied this fact and asserted that both elbows were identical. At my direction the plaintiff's attorney caused the physician to demonstrate the measurements before the jury, with the result that, by this embarrassed physician's own measurements, my statements were verified. The consideration the jury gave to the doctor's testimony was evidenced by their promptly awarding the plaintiff a substantial verdict.

It is quite probable that the Court may at some time appoint you to examine a claimant. In such an event your duty is solely to ascertain certain facts impartial to both sides, and if you decide to give your testimony the proper value, you should report and testify solely to the physical findings. When you testify to conclusions, you are by fact or by inference placed in the light of a partial witness. The one applying to Court for such an examination pays your bill and if you testify at their request will also pay your bill for your appearance in Court. These facts will be brought out by the opposing attorney, however, in whatsoever light you are placed in, by adhering closely to physical findings or facts, you cannot have the weight of your testimony materially lessened. It is the repetition of the old axiom: "Facts do not admit of dispute."

When considering the question of mental capabilities we are put into a field where conversation is not considered in the same light as in cases of personal injury. In the latter it is mere hearsay evidence; in the former it is a representation or expression of the mental concepts and conclusions of the patients, and in so far that it represents these concepts and conclusions, it is in fact or by inference an objective system. In fact, all conversations with an alleged incompetent are important to a Court and jury whether they betray any unsound condition of mind or not and it is proper that the entire subject of the conversations be detailed to the jury and leave it for their consideration.

If it is possible to do so, I strongly advise the examining physician not to approach the afflicted one in the capacity of a physician. The ability of many paranoics to mask their delusions in the presence of physicians is well recognized and you can frequently avoid their reserve if you represent yourself in another capacity.

Some years ago in a case tried before the Sheriff's jury, the demented woman living here in Yorkville, had perplexed several physicians employed by her family because of her reserve during their examination. Learning from her family that her delusion was that of selling vast properties, I approached her in the capacity of a prospective purchaser and shortly she was engaged in figuring the sale of property, all reserve and suspicion being absent.

It frequently is a matter of marked chagrin that these paranoics during trial will manifest absolutely no evidence of mental degeneration. The more shrewdly they are questioned the more rational they appear. My experience leads me to conclude that it

is a grave mistake for an attorney to assume an antagonistic mien toward a paranoic, when the latter is testifying in his own behalf.

In a case tried some several years ago in one of our local courts, the attorney in desperation after two hours of grilling cross examination of the alleged incompetent turned to me and said: "What can I do, doctor? Her answers are clear and logical, the jury believe her and we are licked to a frazzle." My advice was, "Keep still for five minutes and let the delusion assert itself." Scarce had three minutes of silence elapsed when the demented woman broke forth with profane filth and accused her young daughters of impossible designs upon her husband and herself.

The element of alimentary intoxication is one that enters into a certain percentage of mental affections and the question of how great is this influence can only be arrived at by the elimination of all the pathological conditions of the alimentary canal. We all have observed the marked improvement in the mental condition of certain of our patients under effective alimentary disinfection and the stimulation of the functions of the alimentary digestive glands and the muscular coats.

Because of this fact I believe it decidedly prudent in all cases of alleged insanity to examine the bowel contents and to correct all pathological conditions found present before placing yourself on record concerning the mental capacity of your patient.

The presence or absence of syphilis may influence your conclusion as to the curability or permanency of dementia, and it is prudent to satisfy yourself in this fact.

The question of confidential communications is one I believe to be of great importance to the practicing physician. The custom of giving information to the representatives of your patient's opponents without your patient's knowledge or consent is so very general that I believe it advisable to call your attention to the law on this matter.

Section 834 of the Code of Civil Procedure reads as follows:

"A person duly authorized to practice physics or surgery, a professional or registered nurse, shall not be allowed to disclose any information, which he acquired in attending a patient, in a professional capacity and which was necessary to enable him to act in that capacity, unless where the patient is a child, under the age of sixteen, the information so acquired indicates that the patient has been the victim or subject of a crime, in which case the physician or nurse may be required to testify fully in relation thereto, upon any examination, trial or other proceeding in which the commission of such a crime is a subject of inquiry."

I am not competent to go deeply into this matter of confidential communications. Our learned guests may deem it wise to further admonish us on this subject, while reflection awakens us to the fact that the giving of information concerning our patients without their knowledge and consent is in direct conflict with our moral obligations and our Hippocratic oath.

The position of a medical expert is entirely different to that of the attending physician. It is the duty of the expert to give all the light on the case he can impartially to both sides either before or during the trial. It is customary for me when acting in the capacity of an expert to make two copies of my report and if the opposing attorneys desire a copy to furnish it to them. The reason for this is self evident for the very purpose of an expert is to afford the Court, attorneys and jury, knowledge with which to enable them to arrive at justice. By this I must not be understood as saying that the field of a medical expert leads him into a Sherlock Holmes investigation of personal traits, habits and purposes, nor that he demean himself to the capacity of a spy or investigator of the legal merits of an accident claim, but rather as I have previously emphasized, devote himself to exhaustive thoroughness in making his physical findings.

The question of entering into personalities and coaching the attorney relative to some incident that happened, where the inference may discredit the weight of another physician's testimony, is one that is best avoided. I can say of my own personal knowledge that many of those physicians who have lent their assistance to besmirching one of their colleagues, have made no material gain from it. It arouses the personal animosity of the physician testifying, the vindictiveness of the opposing attorneys and frequently it reacts and makes the jury antagonistic to the interests of his employer. When a physician stoops to be a muck raker, he loses his value as an expert.

Conservative statements on the part of the physician testifying in behalf of his patient are always of the greatest weight with a Court and jury. The claimant details fully his physical suffering and a clear recital of the physical findings and reasonable certain conclusions is all that is necessary for a jury in order to form their logical deductions.

I believe the juries as a rule are jealous of anyone assuming their prerogative and all attempts to pass judgment on the merits of the facts is resented by them. This is true of the presiding judge as well as any of the witnesses, and it is a matter of common recognition that the judges can but seldom influence the jury in passing judgment on the facts.

When asked to describe the extent of a wound or fracture, do not say "A severe wound," a "bad fracture." These are facts for the jury to decide. Say rather: "The laceration was located ——, its shape was ——, its depth was ——, its length was ——, it was a simple or it was an infected wound; it involved the tissue of ——. Say of a fracture that it was located so far from a joint, the bones were completely or incompletely separated, — did or did not penetrate the skin, etc. Do not use exaggerating adjectives. Do not say the pain is extremely excruciating, rather, the pain is of a severe type. Do not say, the patient lay as if he were dead; instead, the patient suffered profound shock or was in a condition of unconsciousness. Do not say, a patient will be very lame, but rather, he will suffer from an altered gait or a shuffling of the foot or feet or a limitation of motion in a joint. In simple words give the character and nature of the injury and leave it to the jury to decide the extent of the affliction.

I believe before many years have passed, the Courts, as against public policy, will restrict these attacks of unlimited license made upon physicians testifying in court.

The demeanor of the physician on the stand, the knowledge he displays, the facts he testifies to, his

apparent fairness or interest, his understanding of the physical condition of his patient or client, the thoroughness of detail he has made, are facts for the jury to pass upon. However, these are not usually attacked by the attorneys for our railways and casualty companies, but instead personalities, real or implied, are asked of you in a manner that places you in an almost criminal light.

The so-called "dope sheet" is put into the hands of these attorneys and from this infamous record, you are grilled with insulting questions. This dope sheet is nothing further than a record not founded entirely upon facts but upon possibilities, and inferences, — of anything that you may have done, or said, or was in any way connected with you.

The thoroughness of the dope sheet may be illustrated in the incident I have detailed of Dr. S. W. C., for it was from the "dope sheet" he was questioned relative to his wife's settlement.

It is really a grave state of affairs when the terror of the witness stand interferes with the treatment of unfortunate victims of accidents. It is a well known fact that a great many physicians not only avoid the giving of testimony in their patient's behalf, but also decline to attend these unfortunates because of the terror they entertain that some unpleasant incident in their lives will be laid bare while they are on the witness stand.

125 East 72nd Street, New York.

THROMBOSES OF THE HEART AND BLOOD VESSELS: THROMBOSIS IN CARDIAC DISEASE.

BY THOMAS E. SATTERTHWAITE, M.D., NEW YORK.

THROMBOSIS may occur either in the heart or in the blood vessels, and from different causes. The cardiac thrombus is usually found in the auricular appendages or intra-trabecular spaces, but ante-mortem thrombi occurring in the heart are rare. It is true that before post-mortem examinations were made by experts, intra-cardiac thrombi were often supposed to be the cause of death; but in a personal experience that has certainly covered more than a thousand post-mortem examinations,* I very rarely attributed death to this cause. I am willing to admit that in a few instances death may have been due to a detached thrombus or portion of one, as in one case where death was ascribed by me to an arterial plug, with associated thrombosis in the Pons Varolii. But in the vast majority of instances such accidents are due to detachment of vegetations from the surfaces of diseased valves. In the cardiac insufficiency of myocardial diseases clots often form, but, as with the vulvular vegetations, they usually lodge in some part of the system where the plugging of the artery is not of sufficient moment to cause much disturbance, owing to the prompt formation of a venous collateral circulation. Most,—in fact the very great majority,—of the clots found in the heart at death have formed in the agonal stage or after death.

To the expert eye the differentiation is comparatively simple. Whatever may be the color and consistency of these late formations, the ante-mortem clot is very generally of a muddy-brown color, rather dry and friable. Often it has begun to disintegrate. Of course such a clot, certainly if large in size, has been an embarrassment to cardiac action during life. This subject is one that is only now beginning to be seriously considered by pathologists and clinicians. The case published by Dr. George Dock, to be described, will bring the matter into such notice that clinicians will perhaps be able to recognize the condition in time to come, certainly if the thrombus is in the right auricle.

So far as I know, this instance is the first on record in which even a probable diagnosis was made ante-mortem. (Smithes, Journal of the American Medical Association, October 23, 1908.) The patient, a negro forty-three years of age, was found on examination to have moderate cyanosis, and a small, weak, irregular pulse. The heart was enlarged, and there were abnormal sounds at all the valves. After treatment the abnormal heart sounds disappeared, but later the previous symptoms returned. Two days before the patient's death it was observed that the heart had enlarged greatly, in its transverse diameter, and that the enlargement corresponded with a dilatation of the right auricle. A suspected thrombosis of this auricle was entered in the clinical records of the hospital. At the post-mortem examination there were found "currant jelly" thrombi of both auricles, the right being enormously distended by a blood clot. The right margin of this auricle had extended "four fingers' breadth beyond the right sternal margin." The clot extended through the tricuspid valve into the right ventricle.

How far treatment in such cases may be successful is a matter of conjecture. Certainly the condition is one calling first of all for prophylaxis, and heart tonics of sufficient power should be given to overcome the cardiac weakness, and kept up as long as needed. Digitalin, strophanthin and glonoin can usually be given continuously for weeks and months at a time without any disagreeable secondary effects, and are appropriate in such instances. This has been my experience in myocardial cases. It is also desirable to have cultures of the blood taken to determine whether the thrombosis may be due to infection. If this be present, the particular serum corresponding to the infective agent may be given. A fairly large number of cases have been reported in which some success has followed the use of appropriate sera in blood infection; but, on the other hand, the vaccine treatment or injection of dead bacteria of the same type as those found in the blood has often been inefficacious, if not actually harmful.

Arterial thrombi are not so common or so widely distributed as venous thrombi. They occur where the vessel is dilated or contracted, and on uneven surfaces, as in arterial degeneration, where the inner coating of the vessel is rough or eroded. In the veins, thrombi form in the pouches, round about an embolus, or where smaller veins open into larger ones; also as gradual prolongations of thrombi from small veins pushing forward toward the heart. Gould (Lancet, June 7, 1902,) thinks they are formed in cases of sudden enlargement of veins, or when there is a "regurgitation" from the deeper to the superficial veins. Pressure, traumatisms, neoplasms, and infective pro-

*I have in my possession the records of 915.

cesses due to pus-producing bacteria, possibly also to other micro-organisms, are etiological factors.

When thrombi occur in an artery or a vein, the vessel is apt to become obliterated. This is particularly true of the femorals, renals, portals, and the venæ cavæ. At first the clots are soft and moist. If benign they contract and become drier, and may be absorbed sufficiently to allow the passage of the blood current. Or the clot may undergo calcific change, forming in an artery an arteriolith or in a vein a phlebolith. It is a favorable sign when a clot begins to harden, as it may then disappear wholly or in part. But the prognosis is unfavorable when the clot breaks down so as to form an abscess, though even then the incident may have only a local significance, as is the case with the abscesses and ulcers that form in the clots of varicose veins of the leg. If, however, a large clot should be driven into the pulmonary artery, sudden death would probably be the result.

The most favorable sequel is when the clot is replaced by connective tissue, which in this instance is developed from the wall of the vessel, the clot itself gradually disintegrating. Subsequently the vessel is replaced by a cord of the new tissue, and its function as a blood vessel is lost forever.

The character of the change in arteries is much like that in veins, but in the latter a collateral circulation is established, whereas in the plugging of an artery there is death of the tissue supplied. Occasionally, however, in certain organs, the function of the vessel is compensated for. In the kidney, for example, after chronic inflammation the new tissue of the thickened capsule contains arterial twigs that aid in sustaining the nutrition of the organ when its normal arterial supply is defective.

The uncommon existence of venous thrombosis with cardiac disease was brought prominently before the profession in 1900 by Dr. W. H. Welch. (Trans. of the Amer. Phys., 1900.) He found from his own experience and that of others that in cardiac diseases associated with either infective or chronic wasting diseases, such as influenza, typhoid, cancer and tuberculosis, there was sometimes a venous thrombosis, particularly of the left upper extremity. He gave a summary of 28 cases, the results of his analysis of which were as follows:

Out of 24 cases, there were 17 females and 5 males, the sex of 2 not being stated. The age varied from 9 to 53 years. In 21 out of the 28 cases there was mitral disease, and in 12 the disease was confined to the mitral. About half the cases had a previous history of articular rheumatism, but other diseases were possibly causal agents. In most instances the mitral disease was advanced, and the attack came on during a period of cardiac insufficiency. In 22 out of 24 the thrombosis was on the left side, usually in the left upper extremity. Disease of the veins was supposed to play only a minor part in the etiology. The local symptoms were redness, pain and tenderness.

Of 24 cases 20 ended fatally; 4 recovered. The cardiac disease was the cause of death, not the venous thrombosis. From an analysis of 44 thrombi made in Dr. Welch's laboratory, and from the discovery that in 34 there were bacteria, Dr. Welch was led to feel that infection of the blood was the cause of the thrombosis.

In the discussion which followed, two cases were alluded to, one by Dr. Francis P. Kinnicutt, which had not terminated fatally (case 29), the other by Dr. Carey (case 30). Case 31 was reported by Dr. A. A. Smith, of New York. (Med. Rec., July 14, 1900.) Case 32 was reported by Dr. J. A. MacGregor. (Am. Med., May 25, 1901.) It occurred about six weeks prior to death, during broken compensation, and involved the left auxillary, subclavian, internal jugular, and possibly the left innominate. Cases 33, 34, and 35 were subsequently reported by Dr. Frank Billings, of Chicago. (Gen. Med. Pract. Series, October, 1901.) In two out of these three the cardilac disease was myocardial.

Case 36 was reported by Dr. J. W. Brannan. (Medical Rec., February 22, 1902.) A woman of forty, who had suffered repeatedly from rheumatism, was admitted to hospital with evidences of valvular disease, fluid in the right pleural cavity, scanty urine containing albumin and casts, and edema of the entire body, but especially of the neck, right shoulder and arm, and the right side of the body as far down as the umbilicus. The patient survived nine days. Prior to her death various opinions were expressed as to the cause of the thrombosis. At the autopsy there were found thromboses of the right subclavian, right axillary, and right brachial. There were no thrombi in the jugular. Thrombosis ended abruptly at the right innominate. The superior vena cava was free, but the right auricle contained a pink thrombus. All the valves except the pulmonary exhibited signs of acute endocarditis, and all the heart cavities were dilated. It was suggested that perhaps the right-sided pleural effusion might have been a factor in the production of the thrombosis.

The following case (No. 37) I report. A lady past middle life, a neurasthenic and inclined to obesity, had experienced an attack of heart failure at a time when she was travelling in a mountain region. Three months prior to my seeing her in consultation she had felt a sudden sharp pain in one of her legs. At the time I saw her, she walked with apparent difficulty at times and again with ease, suggesting the intermittent claudication of Charcot. Spasms of the muscles of the legs were said to follow walking, or even excitement, and then complete disability. The heart was found enlarged, without valvular murmurs. The heart sounds and pulse were feeble. There was thrombosis of the left upper extremity, following embolism, it was thought, the latter having caused the sudden pain. The patient was treated by heart tonics, baths, and exercises. She is now able to go about much like other people.

In the majority of these cases the thrombosis is in the left upper extremity, but it may be elsewhere. From an analysis of the cases here given, the mortality is about 75 per cent.

So far as the treatment is concerned, there are apparently two classes of cases, the infective and the non-infective. In the latter, the appropriate treatment is rest in bed during the acute stage, heart tonics while there is cardiac insufficiency, and when the acute symptoms have yielded baths and resistant exercises. Perhaps at the last careful massage is advisable; certainly passive movements. Where there is doubt as to the nature of the disease, or a suspicion of infection,

the blood should be examined, cultures being made from time to time, in order to establish or disprove the matter of infection. If the latter is certain, appropriate treatment should be instituted to combat the poison. At the moment, sera appear to offer a possible means to this end; inoculation of vaccines is also reported and has had good results occasionally. After cultures of the blood have been taken, serum corresponding to the nature of the infection can be administered. Treatment, to be logical, should always recognize the distinction between the infective and the non-infective forms of thrombosis.

7 East 80th Street.

CHOREA—(ST. VITUS' DANCE).

BY JOHN AULDE, M.D., PHILADELPHIA, PA.

Part II.

Arterio-sclerosis. — Under the head of arterio-sclerosis as a causative factor in the production of chorea, we meet with such a multiplicity of symptoms that it seems the part of wisdom to discuss in detail the exact nature of the obstruction previously referred to. In other words, a conscientious effort will be made to elucidate the pathology of the malady, and I shall not be anticipating the evidences in favor of rational treatment by the announcement that chemic deviation alone is responsible for the appearance of chorea as well as for its persistence. Taking up the topics in order, as outlined in the chart, it will be convenient to discuss their peculiarities from this viewpoint, for the purpose of developing the fundamental basis of the chemical problem in nutrition as a guide in the treatment of disease.

Athetosis. — The belief is general that as a result of hardening of the arteries (arterio-sclerosis), we have a peculiar choreic symptom, called athetosis. It is seen in children, also in adults after hemiplegia—parlaysis affecting one side. In the first instance, it has been assumed all along that it was purely functional; following hemiplegia, we must admit that athetosis is due to some organic change in the nerve structures, some obstruction which impairs the transmission of motor impulses. Now, the question arises: Is the obstruction identical in both instances? Considered from the physiological or psychological viewpoints, the derangement of function is identical; from the anatomic standpoint, the condition in both cases is at least similar. Finally, we have to consider the chemical deviation—the puzzle end of the problem in which we are called upon to determine the quantitative or relative value of a known substance, magnesia.

In this analysis it is assumed that the reader is more or less familiar with the illustrative cases previously published, showing how magnesium infiltration may occur in at least three different forms—(1) simple replacement, (2) chemical transformation, or (3) united with calcium, so that it will not be necessary to traverse this ground again. If any doubt exists as to the presence of magnesium as a disturbing factor in nerve conduction, it is only necessary to test the reflexes, the knee-jerk for example. This simple test not only applies in the cases under discussion, but is universally applicable, the claim being amply confirmed by the crucial test of clinical experience. That is, treatment conducted for the special purpose of promoting magnesium dissociation is curative—and again, we have the reflexes in evidence.

Having now advanced the theory that magnesium infiltration is the essential element responsible for chorea, let us study the chemical evidence in its support, together with an inquiry as to the probable chemical nature of the obstruction (deviation), wich impairs the transmission of motor nerve impulses. It will be appropriate also, in this connection, to account for the variations in the degree of intensity—to explain, as far as possible, from clinical observation, why some cases make a spontaneous recovery without medical treatment, or after treatment has proven a failure, while others, no more serious or less favorably situated, proceed to a fatal termination.

Taking the two classes or types of athetosis already cited, studying them in the abstract in connection with arterio-sclerosis, I should say that replacement occurred in children, while in adults we have magnesium united with calcium—always bearing in mind the organic (colloid) nature of nerve structure. Thus, we can readily trace the development of athetosis in children—unsuitable dietary leading to indigestion with consecutive malnutrition, acid excess, perhaps nervous irritability, and finally, the characteristic movements. Should the child experience an attack of bowel trouble, with magnesium sulphate as a part of the treatment, recovery from the acute illness would show the choeric movements greatly intensified, leaving the parents and medical attendant under the impression that the illness had aggravated the malady—a grave mistake, and all too common.

All such cases, except as a result of injury or septic infection, readily respond to the rational methods well known to physiological chemists, by which we endeavor to promote magnesium dissociation according to the law of mass action. Acid excess having depleted the lime content of the nuclear proteid, the cellular structures, including the nerve cells, cease to perform their normal functions. As Professor Loew has pointed out, the magnesium nucleo-proteids inhibit absorption (imbibition), and for this chemico-physiological change or transformation the only known antidote is calcium in excess, according to the law of mass.

Treatment conducted in accordance with the principles here laid down yields results which are but little short of marvelous—of course, it is understood that proper attention is given to diet, and when necessary, to the re-establishment of the normal alkalescence of the blood, without which, relapses are liable to occur. As a guide to confirm diagnosis, we have the exaggerated reflexes, and by the same token, we are able to demonstrate the efficiency of treatment—in correcting the chemical deviation.

It remains to add that arterio-sclerosis, the apparent cause, has received no consideration, and that too, for the good and sufficient reason that it is merely an incidental factor and disappears when the chemical deviation in nerve structure is corrected.

The severity or intensity of involvement is always in direct relation with the disordered nutrition, and as a rule, bottle-fed babies are more reliable than those nourished at the breast. Again, children whose principal food consists of cereals containing a large per-

centage of magnesium in proportion to the calcium content are more liable to intestinal indigestion—and chorea—than those who are fed upon what might be termed a "balanced ration." The practical value of this suggestion will be apparent from a glance at the appended table, and besides it shows how the milk gets into the cocoanut. In this table I have included but a limited number of dietary articles — animal foods, cereals, etc.,—making up the usual diet of children, the estimated "ash constituents" being taken from the comprehensive monograph, "Calcium, Magnesium and Phosphorus in Food and Nutrition" (1910), prepared by Sherman, Mettler and Sinclair, Department of Chemistry, Columbia University (New York).

ASH CONSTITUENTS OF FOOD MATERIALS—ESTIMATED.

Food Materials Animal Foods, Cereals, etc.	Calcium Oxide	Magnesium Oxide	Surplus, Proportions: Cal. Oxide to Mag. Oxide
	Per cent.	Per cent.	
Meats (per 100 grams protein)	0.76	0.19	1.00 to 2.50
Fish and Shellfish (per 100 grams protein)	0.18	0.23	1.00 " 1.27
Eggs	0.100	0.015	6.66 " 1.00
Butter (and butterine)	.022	.001	22.00 " 1.00
Buttermilk (estimated as milk)	.172	.018	9.55 " 1.00
Cheese	1.240	.049	25.30 " 1.00
Cottage Cheese	.100	.015	6.66 " 1.00
Milk, whole	.172	.018	9.55 " 1.00
Cream	.147	.015	9.80 " 1.00
Barley, pearled	.025	.100	1.00 " 4.00
Corn meal	.009	.132	1.00 " 14.66
Hominy (as old process meal)	.014	.196	1.00 " 14.00
Oat meal (including rolled oats, etc.)	.078	.249	1.00 " 3.19
Rice	.012	.060	1.00 " 5.00
Wheat flour (crackers and macaroni)	.028	.026	1.07 " 1.00
Graham flour and entire wheat flour (assumed)	.037	.150	1.00 " 4.05
Flaked wheat breakfast food	.043	.239	1.00 " 5.55
Bread	.021	.019	1.10 " 1.00
Chocolate	.141	.483	3.42 " 1.00
Molasses	.355	.176	2.01 " 1.00
Maple syrup	.123	.100	1.23 " 1.00
Honey	.005	.030	1.00 " 6.00

From this tabulation we get a fairly comprehensive exposition of the inorganic constituents present in food materials generally employed or used throughout the country—for children as well as adults. Hence, the conclusions applicable to children are substantially the same for adults. A child fed upon corn meal, rice, graham bread, flaked wheat, honey and a little meat, is bound to suffer from indigestion because of the excess of magnesia; with the addition of eggs, butter, milk or buttermilk and plain bread, with molasses or maple syrup, it would mean robust health and symmetrical development. I have omitted vegetables and fruits from the list, because in respect to calcium and magnesium, they are more evenly balanced—with a few notable exceptions. Their advantages are due more to the presence of organic acids, proteids and carbohydrates, than to the inorganic constituents.

Parlaysis Agitans. — Under this head, it will be convenient to sdudy magnesium infiltration as it occurs in the third division adopted—magnesium united with calcium. It will not only cover the choeric movements known as athetosis, but also the peculiar manifestations arising from involvement of Broca's convolution, known as the "writing hand."

A case of this character was made up for publication in a former paper under the head of "agraphia," but was finally omitted because the record was incomplete. This patient, a medical practitioner, engaged in office practice only, aged 81 years, had suffered for several months from agraphia or inability to write. Unfortunately, consultations were discontinued, and I did not hear from him again for a period of three months. Calling over the telephone about the middle of January to make a friendly inquiry as to his health, I was told that the doctor was confined to his room, that he had been very sick, but I was requested to hold the wire, as the operator thought the patient would like to talk to me. He came to the telephone, and told me he had had a severe attack of grippe, that he had been confined to the house for two weeks owing to serious embarrassment of the heart. Asked about the shaking palsy, he said that had disappeared, when I suggested that the heart trouble was probably due to a similar condition involving the nerve supply, and offered to send him a new supply of the iodo-calcium.

This offer was accepted, and three days later, the doctor called upon me to report that he was all right, that he felt fine the next day after beginning treatment. He said that after the tablets were received, and he had taken the first dose, it was but a short time before he felt much better, and an hour later, when his daughter visited him, she remarked his improved appearance, took his pulse, and finding so few intermissions, she asked him pointedly if he had taken anything? "Yes," he said he had taken one dose.

Huntingdon's Chorea. — From a theoretical standpoint the causative factor in Huntingdon's chorea differs from the other two types already considered, for the reason that it affects adults or those in middle life, is gradual in its development, the irregular movements and disturbances of speech being progressive in character until we finally have dementia. Of course, there must be more or less hardening of the arteries, but preceding this abnormal condition, the probabilities are that we have involvement of the nerve supply, not only the motor and sensory nerves but the vaso-motor nerves, those which control the caliber of the blood vessels, thus presenting a somewhat obscure symptom-complex. And yet, if we assume that this form of chorea falls under the second division of our classification and is due to chemical transformation, the pathology is clear and distinct. Further, this morbid complexus being agreed upon, it reflects the line of treatment to be adopted.

Now, a word in regard to chemical transformation. The magnesium salts which are distributed through ,the medium of the circulation, although always in combination, must necessarily undergo chemical changes, as otherwise they would pass out from the body without change. We assume, therefore, that oxidation takes place, either through the presence of ozonized oxygen, or through the development of oxidase, a normal product of all cellular activity. Thus, we have magnesium oxide, a chemical product which combines with organic colloids in alkaline solution; that is, magnesium oxide added to an alkaline-solution containing organic colloids, will give us their precipitation—and this is the only known substance which produces this effect.

Therefore, we assume that at least a portion of the magnesium salts circulating in the body are converted into magnesium oxide, that this magnesium oxide combines chemically with the organic colloids composing

the nerve structure, and that it has the same effect as simple replacement or magnesium united with calcium, and impedes, hinders or destroys the capacity of the nerve cells to functionate. In other words, it arrests tissue change and gives us the symptoms of arterio-sclerosis as a result of this deterioration.

The treatment of these cases is therefore reflected by the pathology—it should aim to promote magnesium dissociation, either according to the law of mass action, or by means of chemical disintegration. Success in the treatment will be in direct relation to the physical condition of the patient as well as the length of time during which the disease has persisted, but as a rule, it will be found that the reflexes are exaggerated or absent, and that the normal alkalinity of the blood is diminished—in other words, acid excess is present.

CHOREA—CAUSATIVE FACTORS—SCHEMA.

I. *Idiopathic*:	Extrinsic — Fright, injury, phimosis, study, play, exhaustion, employment. Intrinsic — Faulty nutrition, anemia, carious teeth, worms, rheumatism, automatic.
II. *Septic Infection*:	Scarlet and typhoid fever, diphtheria, measles. Cholera infantum, whooping cough, ptomain poisoning.
III. *Arterio-sclerosis*:	Athetosis, constant movement of fingers and toes (children), also seen in adults after hemiplegia. Paralysis agitans, shaking palsy, beginning usually in one hand, termed "writing hand." Huntingdon's chorea, of adult or middle life—irregular movements, disturbances of speech and gradual dementia. Hysterical chorea—oscillatory movements—and chorea insaniens (maniacal chorea), seen in adult women and usually ends fatally. Writer's cramp, four forms, spastic, neuralgic, tremulous and paralytic—also occupational.
IV. *Pregnancy*:	Sepsis—auto-toxemia from intestinal tract, or due to disordered innervation involving the liver, kidneys, or cerebral centers. Magnesium infiltration, due to lime depletion with acid excess, wasting of bone structure and perhaps uremic convulsions.

Huntingdon's Chorea.—In view of the arguments advanced, it seems doubtful if we can identify Huntington's chorea as an hereditary disorder—it would be in keeping with the obsolete teachings in respect to consumption and tuberculosis, when these terms were regarded as interchangeable and little doubt existed as to the hereditary nature of the disease. Besides, we have this form or type of chorea in the absence of hereditary influence

As to maniacal chorea, it would be unprofitable to enter upon an academic discussion. We have in our midst quite a number of public institutions where such cases are under observation, with physicians in attendance who would gladly (perhaps) extend the advantages of this treatment to such unfortunates. Surely, no serious harm would befall them, and very little risk attend the administration of a few grains, more or less, of calcium carbonate (vitalized chalk), or calcium sulphate (gypsum)—and certainly not, if they were imported and marked, "Made in Germany."

CHOREA—RATIONAL VS. SCIENTIFIC (?) TREATMENT.

Rational: (Chemic) Calcium Salts	Carbonate Iodo-calcium Sulphate
Scientific (?) (Theoretic) External and Internal	Asafetida, arsenic, acetyl-salicylic acid, antimony, anilin, antipyrin, apomorphine, amyl nitrite. Baths (mineral water), belladonna, blisters (to spine), bromural, bromides—ammonium, iron, potassium, sodium, strontium and zinc. Cannabis indica, cimicifuga, cod-liver oil, cold (applications), copper sulphate, chloroform, chloral hydrate, codeine, conium, chloretone, curare. Exalgine, electricity, emetics, ether spray, ergot. Hyoscyamus. Iron. Lobelia. Morphine, musk. Picrotoxin, physostigma. Quinine. Sodium salicylate, strychnine, silver. Trional. Valerian, veronal, veratrum viride. Water (affusions). Zinc sulphate.

Writer's Cramp.—This is strictly an occupational disorder, included among, perhaps, twenty-five others of like character, and is as clearly due to magnesium infiltration as neuritis, neuralgia and shaking palsy—the proof being found in the clinical results attending treatment.

Pregnancy.—There is ample room for an elaborate discussion on pregnancy as a causative factor in the production of chorea, either from the viewpoint of sepsis, or as a result of disordered innervation arising from lime depletion, but it is believed sufficient evidence has been advanced to warrant a preliminary investigation—the which, reminds me to add a Biblical quotation, "Except ye believe Moses and the prophets, ye will not believe me."

Rational vs. Scientific (?) Treatment.—Oliver Wendell Holmes has been roundly abused for his sweeping denunciation of all medicines, consigning them, individually and collectively, to the sea—for the benefit of mankind, although worse for the fishes—but he was excusable, since his ukase was promulgated long before the discovery of magnesium infiltration and its important bearing upon the chemical problem in nutrition. Thus, hope beckons to the future, while memory links us to the past.

Reference to the accompanying chart or plot shows the vivid contrast between rational treatment, based upon the unerring laws of chemistry, and the conglomeration of heterogeneous material offered by so-called scientific medicine—resting upon the rather shifty support of theory and tradition. Chemical treatment is simple, definite and demonstrable — concise, exact, compact; theoretic treatment, on the contrary, is changeable, complicated and unreliable — diffuse, indefinite, adversative. It has lost momentum, coming to a full stop—like an engine on a dead centre—and nothing short of an Archimedean screw (made in Germany!) will arouse the profession from its lethargy.

The ancient geographers, in making maps, included the territory so far as known to them, and to indicate the dangers incident to further exploration, they wrote just outside the margin, "Hic sunt leones," as a warning to their competitors as well as their successors.

Following their example, I should also write, "Here are lions," along the margin of this chart—to indicate the limitations of strictly clinical observation, believing that scientific inquiry will not only greatly extend the horizon, but also that it will enable us to deal with the various questions coming up with greater accuracy, in short, with mathematical precision.

Rational Treatment.—In making up our therapeutic diagnosis, we must, of course, exclude reflex irritation, both external and internal. Faulty nutrition is indicated by anemia, mucous catarrh, together with symptoms of rheumatism, but this is not all; we must study the condition of the skeleton by attention to the conformation of the cranium; we must also inquire as to the condition of the spinal vertebræ—whether there are sypmtoms of spondylitis, kyphosis, lordosis or curvature. Struma is usually indicated by prominent abdomen together with hollow back, and along with this, we have perhaps bow-legs, or flat-foot. The chemic deviation is not always discoverable. By testing the saliva with blus litmus paper, it is an easy matter to confirm the suspicion of acid excess. By testing the reflexes, the knee-jerk for example; an unusual mental activity or deficiency should be regarded as suspicious factors indicative of magnesium infiltration.

This data is indicated in the accompanying chart headed, "Rational Treatment," and will serve a useful purpose in making a preliminary examination in the case of chorea.

Under the head of "Septic Infection" as a causative factor in producing chorea, we have but a limited number of indications for treatment, as it is all important that suitable measures be taken for the purpose of improving metabolism, that is, primary and secondary assimilation. Next in order comes acid excess as a factor which indicates a demand for suitable measures to restore the normal alkalinity of the blood, to the end that it shall be efficient from an antiseptic viewpoint. Lastly, will we have to consider the measures or remedial agents which will promote magnesium dissociation. In recent cases, where the patient is fairly well nourished, the probabilities are that we have to deal with replacement, arising from the diminished alkalinity of the body fluids, a condition which is readily overcome by the employment of calcium salts, carbonate or sulphate, in order to secure chemical dissociation according to the law of mass action. When the disorder has continued for months or years, it is doubtful if this simple measure will be effective, inasmuch as we have to contend with chemical transformation—in other words, the persence of magnesium oxide has given rise to a new chemical product which can only be modified or dissolved through the influence of some chemical which will cause disintegration by acting upon its organic constituents, and this remedial agent is found in iodo-calcium.*

*The name iodocalcium is employed as more descriptive than calcium iodide. It is simply a mechanical mixture of iodine with calcium oxide, one part to ten (1 X trituration). For medicinal purposes, I think favorably of using the normal trituration, that is, equal parts of iodo-calcium and sugar of milk, so that the finished product might be termed a decinormal trituration. In consequence of the presence of iodine, this remedy should be given only when the stomach is empty, to avoid the formation of iodide of starch, and I think it is best given in the form of tablet triturates, each to contain say one half grain of the decinormal trituration. Thus, we avoid any irritation from concentration, and we also secure immediate solution and prompt absorption.

In view of the fact that this chemical substance may itself produce irritability of the nervous system, it must be given with caution, and it is frequently advisable to give it in arternation with one or the other calcium salts already mentioned. Sometimes good results follow the use of iodo-calcium for one week followed the next week by calcium carbonate or calcium sulphate, the latter being especially indicated when we have to deal with wasting of bone such as a rarefying or condensing osteitis, the former when the soft tissues show relaxation.

RATIONAL TREATMENT OF CHOREA—EPITOME.

- I. *Idiopathic*:
  - Remove reflex irritation—Worms, carious teeth, phimosis, injury.
  - Improve faulty nutrition—Anemia, mucous catarrh, rheumatism.
  - Correct chemic deviation—Neutralize acidity, promote magnesium dissociation.
- II. *Septic Infection*:
  - Improve assimilation, primary and secondary.
  - Neutralize acid excess—Restore normal alkalinity of body fluids.
  - Promote magnesium dissociation—
    - Simple replacement.
    - Chemical transformation.
    - United with calcium.
- III. *Arterio-sclerosis*:
  - Restore the digestive capacity.
  - Neutralize acid excess.
  - Promote magnesium dissociation.
- IV. *Pregnancy*:
  - Restore the digestive capacity—Improve metabolism.
  - Neutralize acid excess—Restore normal alkalinity of body fluids.
  - Promote magnesium dissociation—
    - Simple replacement.
    - Chemical transformation.
    - United with calcium.

In the case of adults suffering from choeric manifestations, along with symptoms of arterio-sclerosis, alternation is the most desirable plan, and of course, it is important that proper attention should be given to the digestive apparatus. Generally, however, in this class of cases, that is, in the case of adults, we have to deal with chemical transformation together with calcium as a complication, and the diminished alkalinity of the blood requires first attention. In fact, it is the only successful method when it is desired to secure permanent results. In these cases, acid excess becomes a habit, and while the administration of iodo-calcium will produce immediate and marked improvement in the symptoms, relapses almost invariably occur.

In the case of chorea associated with pregnancy, from sepsis or pathologic changes, the indications for rational treatment are developed in the chart in connection with the foregoing resumé, so that it is a mere matter of detail to carry out the plan of treatment. Special emphasis should be laid upon the different phases mentioned, the salivary reaction and the reflexes, and it will be found as a rule, with comparatively few exceptions, that as these reactions approach normal, symptoms will subside. In other words, improvement is in direct relation with the re-establishment of normal chemical reactions.

RABIES.

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RABIES is a disease at least as old as human history. In India, several thousand years ago, dogs, jackals, foxes, wolves, bears, tigers, and other animals were known to become rabid; they foam at the mouth, which remains open, wrote Susruta, nine centuries B. C., and from the mouth flows saliva; their tails hang down; they do not see or hear well; they snap and bite at one another; and thus communicate the malady of which they suffer. Plutarch observed that rabies was first noted in men in the days of the Asclepiadæ, the earliest known physicians. Theocritus and Plato wrote of rabies among wolves; as did Aristotle, Pliny and many other ancients. The physicians Galen and Celsus, recognized the disease, which was exceedingly rife in the time of Pompey and Cæsar.

Mediæval history contains many accounts of epidemics of rabies or hydrophobia. And coming to our modern era we note some medical history which should give pause to those who would relax the present-day restrictions against suspicious canines. In 1712, for instance, there were many wild animals in the woods of Hungary; an epidemic of rabies originating among them spread so that many human beings were bitten, suffered most dreadfully and died of that disease. From 1719 to 1721 there were several like outbreaks in France and Germany; in 1725-6 all Europe was thus affected; as was England in 1734. There was a notable scourge of mad dogs in Fife, Scotland, in 1748. In 1752 then numerous mad dogs about St. James, London. In 1763 Italy, France and Spain had extensive epidemics of hydrophobia; many wolves having manifested the disease; and in 1774 rabies were general in England. In Boston from 1768-70 dogs and foxes spread rabies; and the disease was then and in that town considered a novel and unprecedented experience. In 1779 Philadelphia and much of Maryland was thus afflicted; and throughout the white settlements of our United States canine rabies prevailed, so Dr. H. T. Bigelow wrote in 1881. Rhode Island had a pronounced "epizootic" of rabies in 1797; and from 1803 to 1830 the infection prevailed to a degree hitherto unheard-of in many parts of Europe and America; not only dogs, but cats, horses, asses, cattle "were furious." From 1810-19 Prussia had at least 1635 human victims of hydrophobia, most of whom had been attacked by rabid wolves.

In 1818 Marochetti, the Russian physician, attended 26 patients. In 1830-2, in Vienna 39 cases were reported; between 1830 and 1847 Austria reported 1038 human victims. Between 1840-42 the disease was rife in and about Lyons, France. In 1851 there was "a terrible epidemic of canine rabies in North Germany; in 1852 the instance is cited of a mad wolf having bitten 128 persons and a great number of cattle; from 1855 to 1860 the disease was common in England, North Germany, France and Spain. Many dogs were rabic in Ohio and Missouri in 1860. In Bavaria from 1867 to 1873 every year presented 800 cases of canine rabies among a total of 275,000 dogs. An extremely instructive *datum* is that from 1870 to 1881 rabies prevailed very constantly in the North of England, by reason "of the insufficiency of police measures." In France, between 1854-60, one thousand human beings died of hydrophobia; in Prussia, between 1810-1819 there were 1,635 such deaths; in that same country, between 1820-1834, 1,073 deaths from rabies. Austria from 1830 to 1838, reported 589 human cases; from 1839 to 1847, 449 cases.

From 1855 to 1874 New York City has yearly had from one to seven deaths reported due to hydrophobia; in 1873 there was a marked epidemic in the metropolis. Such are facts worthy of consideration when an adequate rabies prophylaxis is contended with.

Dr. Geo. G. Rambaud, whose knowledge and experience of rabies is unusually extensive, considers the most frequent source of infection to be the dog, although all mammals are susceptible. Thus human beings have been bitten by rabid cats, horses, bears, cattle, pigs, rats, wolves, foxes, deer, skunks and so forth.

The disease is usually transmitted through a bite, the danger of which depends upon the depth, the dimensions and the location. Nor is a bite the only means of infection; any wound, fresh or otherwise, may easily be contaminated by the rabic virus, which has even penetrated the freshly shaven skin—a fact to be remembered in relation to the filthy habit of allowing a dog to lick the face. The conjunctiva and the nasal mucus membrane may be *viae*.

There are various estimates of the proportion of people who have developed hydrophobia after having been bitten by rabid animals. Of 855 cases collected by Tardieu and Bouley in France, 399 or 46.6 per cent. died. This was before the Pasteur treatment by the inoculation of anti-rabic virus. In 1908 Kassauli in India records 1398 subjected to the Pasteur inoculations with five deaths—a death rate of 0.36 per cent.; of 108 persons bitten by supposedly rabid dogs not thus treated 44 died. In India, again, of 154 persons bitten by supposedly rabid jackals, who did not undergo the Pasteur treatment, 48 died.

The more numerous and the deeper the wounds the greater is the danger; the mortality is greatest when the bites are inflicted on the bare parts. Clothing, to a very measurable extent, prevents the introduction of the virus with the bite, or at any rate reduces the quantity that reaches the wound. The nerve supply of the region involved is also important to consider: face bites are most dangerous, the virus thus rapidly reaching the medulla through the cranial nerves. Almost 90 per cent. of face bites have proved fatal. Next in virulence come bites on the finger tips; the hands and wrists have had a 65 to 70 per cent. fatality; the arms 25 to 35 per cent.; the lower limbs, 20 to 25 per cent.; the trunk 5 to 10 per cent.

Infection is also possible through scratches made by the claws of rabid animals: infected cats, whose claws are contaminated with saliva, are here particularly dangerous. The rabid virus reaches the central nervous system by way of the nerves; possibly it is conveyed also in the small lymphatics accompanying the nerves.

As to the nature of this virus; nothing is as yet positively known regarding it; it passes through a Berkefeld filter, thus proving Pasteur's hypothesis that the specific organism of rabies is exceedingly minute. Rabies is then in the class of unquestionably infectious

diseases (with scarlet fever, measles, smallpox, yellow fever, infantile paralysis and others), the specific causes of which have not yet been demonstrated absolutely beyond peradventure.

A rabid animal is not to be killed if it is practicable to confine it; but should preferably be allowed to die of the disease. The development of the disease might make the diagnosis certain in cases when, should the animal have been killed immediately after the bite, even microscopic examination of lesions might prove inconclusive.

The "Negri bodies" are pathogenic of rabies; but they are not the specific organism of that disease; they are never found in the saliva of rabid animals: their presence in the brain and spinal cord is positive evidence of rabies, but their absence from these tissues does not necessarily negative the diagnosis. A five per cent. solution of carbolic acid destroys the virus in an hour; a two per cent. solution in two hours; lemon juice in from seven to ten minutes: this virus is rapidly destroyed by chlorine and bromine water.

The incubation period of rabies varies from fourteen days to several months—the average being from five to ten weeks; the disease has appeared two years after the bite. The length of the period of incubation depends on the location of the bite and its nature, and upon the condition of the subject's health at the time. Face bites have the shortest incubation; for then the virus has not far to travel to reach the nerve centres. All conditions depressive to the nervous system tend to shorten the period of incubation. On the other hand, under favorable conditions (the subject having been in good health at the time of the bite) the virus may remain latent for a long time after its introduction in the system, and be finally destroyed. Rambaud makes the exceedingly pregnant observation that rabbits inoculated with fixed virus, and which had apparently escaped from the disease, would suddenly develop all the symptoms of rabies, and die after being exposed to severe cold or after being insufficiently fed; "such conditions may be met with in human beings." Here one sees how important is the physical condition when one who has been exposed to an infection, is in jeopardy of developing the disease. The healthy subject may escape by reason of his phagocytosis, his opsonins and his other inherent forces destructive of invading bacteria; whilst the predisposed individual presents a good soil for germ development and thus succumbs.

The following resume of the symptomatology is based upon Rambaud's work: There are two forms of rabies: the furious; and the paralytic.

The furious form has three stages: the prodromal; excitement; and the paralytic stage. The prodromal stage is characterized by nervous manifestations: the patient is melancholy and indifferent to his environment; he prefers solitude; at times he feels imperatively the need of exercise, and gets relief in a long walk. Headache is invariable, being most intense in cases of face bites. Sleep is broken; there are nightmares; this sleeplessness is never absent even in children. The cerebral manifestations are still more marked in patients conscious of their trouble and its dangers. In some cases the sadness is replaced by unusual cheerfulness, even exuberance bordering perhaps on hysteria. This prodromal stage lasts from two to six days; in a child observed by Roux there was uneasiness and melancholy three weeks after the bite though the invasion did not appear until three months later. Very likely the beginning of this prodromal stage corresponds with the first appearance of the virus in the brain. In some experiments of Remlinger the nerve centres of animals inoculated with fixed virus were virulent eleven and twelve days before the animal's death, which occurred eighteen days after the inoculation. It would seem then that in a man bitten by a rabid dog the nerve centres are virulent at a much earlier period than was formerly thought to be the case. Pain in the bitten part is often an early symptom, having appeared a fortnight before any other symptom; this pain is lancinating, usually radiating from the cicatrix; at other times it is replaced by a feeling of numbness or cold. After a bite on the hand, for example, the pain is first felt at the site of the bite, whether or no there be any visible cicatrix; then the pain gradually extends to the wrist, the forearm, the arm, the shoulder and the side of the neck.

Then comes the period of excitement—the hydrophobic stage; the symptoms now occurring are due to the involvement of the medulla. Respiration becomes irregular and difficult, being interrupted by deep inspirations; the pulse is accelerated; the pupils are dilated; there may be vomiting. Difficulty in swallowing is, however, the one symptom which usually attracts the attention of those near the patient; it appears more or less suddenly and usually to the patient's surprise of the unfortunate sufferer, who may have forgotten that he was bitten and is utterly oblivious to the nature of his illness. The first intimation of something wrong may be experienced in "taking a drink;" the sufferer cannot account for it, will make repeated trials, and then conclude that if he "cannot get down a drink of whiskey," he must be "in pretty bad shape." In attempting to eat or drink the patient now feels a constriction of the pharynx; this is transitory, but it reappears at each attempt to swallow. The facial expression denotes the painful sensation. On being offered a glass of water or other liquid, the patient, although thirsty, at first refuses. Then, if he can be persuaded to try, he spasmodically extends the arm to get hold of the glass; the eyes become fixed; the jaws tighten, the nares are dilated. The glass is brought to the mouth by jerks; and as it gets near the patient, trembling, eagerly leans toward it and, while attempting to drink (whether he be successful or not) the respiratory spasm is brought on. The head is raised, slightly thrown back, and several short, jerky inspirations are made; the facial and neck muscles are rigid, respiration ceases. Then there is a sigh and the patient becomes calm until the next crisis; this is brought on by the sight of a liquid, by the sound of running water, by any kind of sudden noise, by a bright light suddenly brought before the patient's eyes, or by a draught of air blowing on his face—this latter being invariably productive of a spasm. There is general hyperesthesia; exaggerated reflexes; marked restlessness. The patient may get up from his bed, strike his head against the wall; and thus seemingly without suffering wound himself severely. Rarely have rabid persons become aggressive, nor have

they attempted to bite except when put under restraint; on the contrary they usually warn their attendants of a coming attack and beg them to remain away, fearing to harm them. They have no desire to talk and are reluctant to answer questions. When they do reply a slight respiratory spasm precedes the first words, and the sentences are abrupt and interrupted by short inspirations. The voice is often husky; and when the patients are excited and attempt to talk loudly, they emit a peculiar sound which the imaginative laity has likened to the barking of a dog.

Death may mercifully supervene at this stage; but as a rule, the disease goes on to the paralytic stage. Consciousness gradually disappears, after alternating periods of perfect lucidity and hallucination. The spasm crises become weaker and less frequent; the ability to swallow sometimes returns, and small quantities of food may be taken; but inanition is progressive. Certain groups of muscles are paralyzed; ataxic movements may be observed. Salivation is profuse—usually of thick and ropy saliva. The body temperature, which is somewhat above normal during the excitement stage now rises rapidly to 100-102 F. or even higher. The pulse is feeble and rapid—120 to 140. Facial paralyses, ophthalmoplegia, hemiplegia, or peraplegia preceds the final collapse. This paralytic stage rarely lasts beyond twelve hours. In rare cases manifesting the furious form the prodromal stage may be absent; and the disease may begin suddenly with the period of excitement. This is more likely to occur when the development of the disease is hastened through some such accidental cause as a violent emotion, or exposure to cold, or excessive exertion.

The paralytic form of rabies differs from the furious form in the more or less absence of the stage of excitement; the prodromal stage is here, however, the same as in the furious form. The first symptom is usually a sensation of numbness and heaviness in the bitten limb; there is pain at the site of the wound and the muscles are the seat of fibrillary contractions; then the limb becomes weak and clumsy and its movements are ataxic. Sometimes the paralysis does not begin in the bitten part. The first manifestations are then of violent pains confined at first to the lower limbs and extending thence to the trunk; there are coincidently numbness and weakness of the limbs, and movements become impossible, Whatever be the first symptoms, the paralysis is usually ascending; from the limbs, it extends to the trunk, then to the bladder, rectum and intestines. It may reach the muscles of the pharynx, and often becomes general before death; the average length of this form of the disease is three or four days—as short as two and as long as eight days. The paralytic lasts longer than the furious form.

In the diagnosis one must recall a pathognomic symptom of rabies—the pharyngeal and respiratory spasm caused by a slight draught of air; this is elicited by blowing gently on the patient's face while his attention is attracted by a third person or by conversation. The facial expression is characteristic and never to be forgotten. Rabies must be differentiated from hysteria, tetanus, lyssophobia, delirium tremens, belladonna and stramonium poisoning.

In tetanus the spasms are tonic rather than convulsive; the mental state and facial expression differs from that observed in rabies; and the contractures of the jaws and limbs are characteristic of tetanus. In hysteria the reflex contractions brought on by cutaneous stimuli are never as intense as those of the spasm in hydrophobia. Lyssophobia or imaginary hydrophobia occurs only in the neuropathic; it is amenable to treatment and its symptoms are usually so prolonged that no mistake can be made. In the drug poisoning mentioned the history of the case and the characteristic symptoms produced by the drugs usually suffice to prevent error.

Immediately upon the bite of a suspected animal the ragged edges of the wound (if there are any) are excised; the wound is cauterized by the use of caustic potash or concentrated carbolic acid: even beyond twenty-four hours this measure may avail. In view of the anxiety natural in the premises we should cauterize even if the diagnosis of true rabies is not positively assured. The inconvenience is negligible in the circumstances; and the injection of cocaine in and about the wound should make the operation practically painless.

Immediately rabies is demonstrated in the offending dog, the sufferer from the bite should undergo the Pasteur inoculations. Here is a procedure scientifically as well established as that of vaccination against smallpox. As a result of the Pasteur treatment, in 26,000 cases thus treated in Paris, from 1886 to 1901, less than one per cent. died of hydrophobia; in the Pasteur Institute in New York a like ratio has obtained as also in other cities. The very rare failures are by reason that it is not promptly administered; its beneficent effects are rendered possible only by the fact that the average incubation period of rabies is relatively long. The Pasteur treatment may now be obtained from the United States Public Health and Marine Hospital Service, Washington, D. C., on application by health officers having moderate laboratory facilities for administering it under their supervision. There are, moreover, some twenty institutions in the United States in which the Pasteur treatment is available; a list of these is given in the publication *The Prevalence of Rabies in the United States,* issued by the abovementioned Service.

The procedure in a case of rabies, then, is as follows: The wound is treated antiseptically, like any other wound. The dog, if captured alive, should be watched from eight to fifteen days; if it develops symptoms strongly suspicious of rabies, it may be killed and the brain examined for the Negri bodies. Upon a positive diagnosis the patient should submit at once to the Pasteur inoculations.

The clinical symptoms of a rabid animal, as the dog, develop as follows: The disposition is changed; it becomes unusually attached to its master; it disappears from its home for from several hours to two days; there is change in the bark (or total absence of bark even on provocation); there is lack of appetite, difficulty in chewing and swallowing solid food. The animal is excited and appears to have hallucinations; it snaps at imaginary objects; it may now attack its own master; it is excited by the sight of another dog (this stage may be absent in the dumb form of the disease); it tears its own bedding, curtains, carpets,

etc. It cannot eat; it takes food into the mouth, but this drops out after one or two attempts at swallowing have been made; drinking, however, is little or not at all interfered with and there is no hydrophobia in the strict sense of the term; unsteady gait shows the beginning of paralysis of hind legs; the pupils are dilated; finally comes dropping paralysis of lower jaw and then general paralysis.

THE MISUSE OF FOOD THE PRINCIPAL FACTOR IN THE CAUSATION OF DISEASE.

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Late Chairman, Physiology and Dietetics, American Medical Association.

THE science of living begins at the mouth. As a man eats and digests his food so he is. Owing to errors in human feeding, disease is latent in every man and at all times. The few that do not abuse health have the rewards which follow upon it. Scarcely anyone escapes sickness and pain. Life is maimed and but half what it might be on account of sickness and premature death. Sound health means living by knowledge and not by chance.

Grains of the cereals are only good, but the cooks spoil most of them before they reach the human palate. Conventional cooking is far from blameless in the causation of disease. Artificial appetite and gluttony please for the moment, to be followed later by compound interest in pain and bodily distress. The mouth is the open door to health and strength, likewise, to self-injury and early destruction.

True hunger is the gauge that tells how much to eat. Taste recognizes what is good and directs how long food is to stay in the mouth to be acted upon by saliva, while the sense of smell is always on guard to aid taste in selecting the wholesome and to reject the harmful substances offered as food. With hunger, taste, smell, all acting in harmony, the stomach is safe.

Wrong habits early acquired often abuse the hospitality of the stomach. The first warnings of injury, done to the gentle, patient stomach, are mild, followed later by absolute protest against further abuse; finally, after much warning, many protests and great injury, disease is established. Then comes suffering, disability and sorrow. But, fortunately, it is never too late to mend.

Digestion is properly performed by the stomach and its juices, only in those instances in which the foods are correctly selected and aided by gentle cooking. Owing to the artifices of modern cookery, the sense of taste is confused, the smell is bewildered and appetite is uncertain or exaggerated. Such delicate sense tools need careful and trained handling lest their edges be dulled. If these human instruments of precision are to last and be useful till age is ripe, beware of abuses and rough usages.

Foods are forced into the gullet and stomach too rapidly. Coffee and other drinks distend the stomach. Too much haste is the rule. Too much is eaten is the common practice of young and old. The stomach is loaded too quickly and with too much. Eagerness to eat much and too often, and a desire for an over-generous variety, swamp the digestion.

Eating and drinking for health and strength are two of the finest arts in the life of the human being. But neither eating or drinking can safely be left to human instinct or customs. These are processes so delicate and subtle, and far reaching in their consequences, that it is not safe to trust to the instinct alone, unguided by intelligent forethought and experience.

Social custom has made modern dining a prolonged misdeed against the stomach. Dining for sociability would not excite protest were it practiced with a due regard for the higher uses of food as a means of satisfying natural hunger. By virtue of the fullness of vitality, it is common to fall into the habit of table wrongs, and, apparently, be well.

In reality, so delicate are the organs of digestion, that even slight errors of the diet may bring on disease and fatality. If the mouth were taught to reject what is unfavorable in the digestion of food, and if food was in the proper proportions, and quality, no one could know by any unpleasant sensation of the existence of a stomach. In health there is no consciousness of internal organs or processes.

It is so ordained that man may live to an age of sixty or seventy years, but to suffer half his life from disease is not satisfactory living. A life under right habits of living is worthy of every man's best efforts. Living according to the intent of nature should carry human age above one hundred years, and the last years ought to be the pleasantest. Honor and respect is due the old, esypecially if that old age is the reward for prudence and righteous living.

A man frequently wants to die after he finds that his powers are failing and his nerve lost. Loss of vitality and shattered nerves are usually ascribed to over-work and over-worry, but a truer explanation is indigestion. Over-work of the stomach and foods that are not wholesome, constitute the first weak link in the chain of health. Such food material as is not in a state of adaptation for easy solution when it reaches the stomach may, and usually does, lay the beginning for consumption, cancer, tumors, abscess, rheumatism, neuralgia, neuritis, paresis, paralysis, Bright's disease, apoplexy and nervousness.

Every care is to be taken to preserve a sound stomach, and this is most successfully accomplished by paying great attention to food while it is yet under the control of the hands, the senses, and judgment. The importance of thoughtfulness in food selection is a matter that can not be overstated. It assures certainty of digestion, and saves the stomach from fag and disease. A sound stomach is the surest means of avoiding sickness in other parts of the human body.

If the stomach is over-served with heavy, fatty food, and, especially, if such food has not been partly digested by correct cooking and ripening and softening, some part of the contents pass into the system in a state of incomplete digestion. Dyspepsia and indigestion are widespread, and by reason of such defects at the very source of strength, the body is weakened and accumulates sediment faster than the system can remove it.

A single mistake is but a trifling incident in the whole life of the body, but many such happenings, day after day, build surely for sickness, suffering and premature

death. Let any one take note of the passing hence of friends and acquaintances, and who is there that can truly feel safe?

Health and safety depend on right habits guided by knowledge and not by a belief. Physical human requirements are not to be neglected under the supposition that some power, outside the body, will save man in the face of his oft repeated mistakes. By taking heed and supplying the needs of human life as we know it, it is reasonable and right to expect immunity from suffering and disease.

The disease called Grippe or Influenza, for example, originates in consequence of some defect of the stomach. It is impossible to acquire foul blood and consequent bodily disorders where right feeding is the daily rule. Such diseases are not to be treated at the point where they first show themselves. The affection in the nose and throat in such cases are convenient spots selected by the disordered system to give a warning of the revolt going on within the body.

The disease is always inside the organism before it appears upon some part situated nearer the surface. Mucus or yellow pus from the throat, nose or lungs is the *effete* product from a diseased blood. The system is trying to remove the waste by forcing it to the point of least resistance such as the nose or throat that it may be thrown off.

A scientific treatment of disease begins by kindly prohibiting the entrance into the stomach of all objectionable food substances, till such time as the blood can free itself from the waste with which it is surcharged. It may take the blood a few days, even a few weeks or months, to so renovate itself as to make it safe to again return to the usual table-food.

The scientific physician of experience will observe patiently and confidently the patient's need for nutrition, as unmistakably shown by weakness and loss of weight. It is good treatment to offer what is delicate, light food to a sick person. Nothing is ever lost by encouraging the return of real hunger, and everything is gained for the good of the patient.

Let not your fear of complications, or your theories of fasting or, waste of patient's strength, cause any neglect of the foregoing rules in the scientific treatment of the unfortunate sick. The hunger signal will appear in due time, but if it should not come, it shows that the case is hopelessly fatal, in such cases it would be wholly useless to force food.

The alimentary canal is the root of life. The weight of the body depends upon the amount of food that it can prepare and absorb, while strength and bodily comfort, depend upon so much as is perfectly converted and assimilated. Perfect digestion depends upon health of the vital organs, and in turn perfect health of the vital organs depends upon a perfect digestion.

It is seen by this interdependence between vital parts and digestion, that continuous health depends upon an even balance of forces acting in harmony. If the food is proper and digestion perfect, nature has a fair chance to show itself in the beauty of health.

Mental and physical wrecks and human beings with added sorrows, are directly traceable to mistakes which start at the mouth. It seems strange that man's food, his best ally, can at the same time be his greatest danger. Food may be good and wholesome, but it is not to be admitted into the stomach till it has been inspected and passed, as safe, suitable and bland. It is a common mistake to think strength possible upon scanty food, on the contrary, physical endurance is a matter of perfect digestion and full eating.

Temptations of the table and sideboard, appear hard to resist, habit is strong and holds on with a tight grip. Children are misfed as a rule from the beginning, thus creating a bad tendency before the infant leaves the nurse. As a growing child, the dangerous habit of gorging candy and stimulating food if unchecked, child sickness and disease are thus produced, and in no other way, save in rare cases.

Children have many narrow escapes from death, but reserve vitality carries some of them to mature years, even though affected with disorders and disease all along the way. In spite of daily and oft repeated errors, children manage to live and grow, but many are stunted and deformed by the time the growth is finished. False table-habits begun in the early years of life are next to impossible to correct.

The list of favorable edibles is extensive, the better articles are in the following enumeration. The quality and service of any food material rests largely upon the mode of preparation, and use at table. The best foods may be spoiled in the kitchen. The cooking of foods for table use is a calling that is second to none, a worthy, high, noble profession or work.

TABLE OF FOOD ARTICLES.

Tomato, celery, radish, beet, turnip, carot, cabbage, asparagus, squash, potato, onion, spinach, kale, lettuce, cucumber, romaine, endive, oysterplant, kohlrobie, celery knob, rhubarb, and some others.

Apple, peach, plum, pear, orange, lemon, grapefruit, banana, pineapple, raisin, apricot, berry, cherry, grape, cranberry, fig, date, prune.

Bean, pea, rice, wheat, oat, rye, barley, corn, hominy, maccaroni, honey, sugar, salt, pepper.

Peanut, pecan, walnut, hicorynut, almond, filbert, brazilnut, chestnut, pinenut.

Oysters, fish, poultry, meat, eggs, milk, cream, butter, cheese, game, are unfavorable human foods, if used at all, it should be in emergencies, or sparingly.

127 West 58th Street.

A Thumb-Fingered Generation.—Writing to the "Mendel Journal," justly named in honor of the discoverer of the now generally accepted law of heredity, Mr. Drinkwater, a physician and scientist (they are not all called "doctors" in England) contended for the possibility of producing a race of thumb-fingered men, were such a race desired. He has traced the history of a family of seven generations from an ancestor who was remarkable for the abnormality known as thumb-fingerness, that is, she had only two instead of three bones in all her fingers and toes. This peculiarity has been inherited through the six generations strictly in accordance with the Mendelian law. On the one hand the normal children have never produced abnormal offsprings; on the other hand the creation of a race who all possessed shortened fingers and toes could be positively insured by selected marriages of cousins.

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A NEW BLOOD TEST.

IT is reported from London that Dr. Willcox, analyst to the Home Office, at a recent magisterial inquiry into a charge of murder, testified that certain blood stains on the collar of the accused man were caused by human blood, a circumstance proved by the serological test; this appears to be the last word in medico-legal science on the subject of detecting different kinds of blood stains. It has been known for some five years, but not in the present perfected state; and the case here cited would seem to be the first in which it has been offered as testimony in court. This test is considered so delicate that the flesh of Egyptian mummies responds to it. A special serological laboratory has been fitted up in the buildings of the Royal Society of Public Health; and here a demonstration of the test has been given by Dr. Rajchman.

Hitherto all—or at least most—methods of discriminating between different kinds of blood have been based on color, or on the appearance of the corpuscles under the microscope, the new test is based on the chemical character of the serum constituents. A piece of linen marked with a dark red stain was placed on a watch glass, and covered with a dilute salt solution, which Rajchman declared would slowly dissolve out any serum that the stain might contain and which would at the same time remove any corpuscles. The microscope revealed the corpuscles in this specimen which proved thus to be some kind of blood. During this experiment Rajchman showed six test tubes each of which contained an antiserum; and each of these latter had been prepared by injecting the blood of some animal into a rabbit. The different kinds of blood with which different sets of rabbits had been treated were those of a man, a horse, a pig and an ox.

After a certain number of injections the rabbit's blood contains "precipitin"; a drop of blood taken from the ear of a rabbit containing the precipitin caused by human blood affects curiously the serum dissolved out by the salt from a human blood clot.

A few drops (1-10 cc.) of the saline solution containing the serum was placed in a very small test tube; and to this was carefully added a drop of the human antiserum. The latter falls to the bottom of the tube; whereupon at the point of contact of the two liquids a ring of filmy opalescence is formed: but when any of the other antiserums is dropped in there is no such opalescence.

Experiments seem to have demonstrated that in only one case does this test fail; there is no difference between the blood of a man and the blood of a high class ape. The latter creature, by the way, has of recent years been of much service to medical science. For example, in estimating the comparative status of the human and the bovine tubercle bacillus it has been easily shown that the human type will produce tuberculosis in the lower animals; but, for obvious reasons, the converse has not been so easy of demonstration. Here Darwinism has been most helpful. There are a whole series of diseases common to man and the anthropoid apes, but which will attack no other animals. This has been proved by Metchnikoff and his collegues at the Pasteur Institute; and these scientists have also proved that protective and curative sera may be produced in this fashion. There is certainly a profound resemblance in the bodily chemistry—one no less striking than the anatomical resemblances so evident of man and these "primates."

We have long known—to revert to blood tests—that the blood of each species of animal differs radically from that of every other. The expert in murder trials has hitherto been very hard put to it to decide whether specimens submitted to him are of human blood or not. Mammalian blood could be distinguished from that of other animals, by means of the characteristic shape of the corpuscles, which is quite common to all mammalia save the camel; but to distinguish between the blood of a man and a dog was a difficulty which could not survive the average cross-examination. Now, however (and apart from the Rajchman test here mentioned), it has been observed that when the blood, say of a dog, is injected into the blood vessels of another family of animal, such as a cat, the red blood cells are destroyed and disintegrated; whereas, if the dog's blood is injected into another dog, no such disintegration occurs. Hence, to distinguish between human and canine blood, one need only make a sterile solution of the blood stain, and inject it into the dog; if disintegration occurs the blood cannot be canine; if it does not, the blood cer-

tainly must be dog's blood. The bizarre and somewhat humiliating fact remains, that the blood of the anthropoid ape gives the characteristic human reaction, while that of the lower monkeys does not.

THE INFLUENCE OF MEDICINE ON GENERAL EDUCATION.

IT is a hibernicism to boast of modesty, yet we believe that the medical profession would have a greater influence in the world, if it were not so disinclined to describe its triumphs, if it had not of its own free will, disclaimed the mystic powers once attributed to it, and if the conscientious desire to achieve better scientific and humanitarian results, did not lead it to emphasize its limitations and needs rather than its accomplishments.

At present, without any direct reference to scientific and technical achievements, we wish to call attention to the example set by the medical profession to educators in general.

Medicine is the prime mover in requiring universal, systematic institutional training for life work. It is true that there were theological seminaries, law schools, normal schools, and colleges of pedagogy, even business "colleges" and training schools for various kinds of work before graduation at a medical school was legally required as a preliminary to practice, but the clear conception and rigorous demand of formal, didactic training in a specially chartered school as a preliminary to the practice of a profession, may rightly be claimed for medicine and, even to-day, the universal requirement of such preparation is limited to medicine and closely allied professions, such as dentistry and pharmacy, upon which medicine has exercised a particularly intimate influence.

With the exception of these latter professions and various forms of charlatanry to which the analogy of medical requirements could be directly applied in pleas addressed to legislatures, no branch of education has so markedly and rapidly advanced its standards as has medicine. Counting the increase in sessions required, the lengthening of each session, and the extension of the average day's work, it is rather understating facts to say that the technical requirements of the medical school have been doubled in the last quarter of a century. Meantime, the general educational requirements have increased from practically nothing at all beyond a smattering of a common school training, up to a full high school course, while many medical schools require one or two years of college study and a few a full collegiate education. The quality of the technical study has also increased from memorizing arbitrary facts and descriptions of superficial observations, to a fairly scientific conception of principles and laboratory, and object lessons to insure the grasp of both facts, principles and technical skill. In addition, the work of the medical schools is, in practically all states, controlled by an independent licensing power.

It should be fully realized that the credit for this enormous elevation of standards is due to the profession itself, and not directly to popular demand for legislative action, or even to medical educational institutions. While, of course, individual laymen, legislators and medical teachers have appreciated the need of this advance and have lent it hearty support, it has been true in general, and, especially in overcoming inertia at the beginning, that the dominant force has been the conscience of the profession itself.

Excepting professions and pseudo-medical organizations directly influenced or coerced by our profession, no other educational body has approached this rate of increase of standard. Excepting that they have also advanced in discoveries and made didactic improvements quite analogous to those illustrated by medical schools, literary and scientific colleges have not notably raised their standards in this period of a quarter of a century. Indeed, considering the substitution, at the election of the student, of modern for ancient languages, particularly Greek, the lessened requirements in mathematics as compulsory studies, and the credit of technical studies, available for medical, engineering and other professional careers, in the college course itself, the A.B. and B.S. degrees now represent rather less hard work than they did at the beginning of the period mentioned. Whereas the requirements for the medical doctorate have about doubled in twenty-five years, those for the baccalaureate degree have doubled in about twenty-five decades.

SMALL FEVERS GRATEFULLY RECEIVED.

THE reader who despises frivolity is at the outset warned as to this editorial, which is frankly nonsensical; the responsibility for it rests mainly upon Uncle Dan, a Harvard man of the day when Hollis and Halworthy were up-to-date dormitories. Uncle Dan has been reminiscing of a coterie of other days, among whom was Dr. Peabody; and Lowell, a youth who afterward was for all too brief a period housed *near* the Court of St. James; and one Oliver Wendell Holmes.

One morning James Russell stood hat in hand to assist absent-minded Dr. Peabody (whose sight was not so good as it used to be) to alight from the old

horse-car in Harvard Square; the ever-humane doctor, seeing the inverted hat, dropped therein a coin, with a "There, my good man, there!" Lowell ever after cherished the coin as a memento.

The Autocrat of the Breakfast Table was once a guest—and a very approachable one—at the Profile House, in the White Mountains. One evening charades were in order; and Holmes asked permission to put one on. This was joyfully agreed to; whereupon he had a brief consultation with a friend. The latter then appeared, as if for a morning stroll, and rambled aimlessly upon the stage; then Holmes followed, walking briskly; the two gentlemen met, saluted cordially, and then left the stage. "A word of five syllables in that one act," announced Holmes. Nobody could guess the word, which was "met-a-physician."

The appreciation of this charade was so cordial that Holmes was asked to give another. He and his fellow-conspirator complied; to everybody's mystification they went through precisely the same scene. "A word of three syllables in that one act," announced Holmes this time; the word was "metaphor." Uncle Dan tells how, when Holmes was just a struggling young doctor somewhere along Charles Street, he once threatened to put out a sign, "Small fevers gratefully received."

We may add here the experience of James Payn, at one time editor of the *Cornhill Magazine,* the door of whose sanctum was one day opened by an unannounced caller. The latter had a goodly roll of papers under his arm, whereby Payn scented a poet with a never-ending epic. "Well, sir?" "I've brought you something about sarcoma and carcinoma," announced the caller. "We are overcrowded with poetry—couldn't accept another line, not even if it were by Milton." "Poetry!" flashed the caller indignantly; "do you know anything about sarcoma and carcinoma?" "Italian lovers, aren't they?" ventured Payn. The caller retreated in the greatest wrath; under the same roof as the *Cornhill* was the office of a medical and surgical journal, and it was that had been sought by the medical writer of the treatise on those lesions with the euphonious names.

Again, Dr. C. G. Daubeny, an early nineteenth century lecturer in chemistry at Oxford, had in one John Harris an invaluable assistant. An experiment of Daubeny's did not give the result he had predicted, whereupon he turned to Harris: "John, when we tried this experiment before the lecture the results were so-and-so." John assented, and the professor turning to his audience, observed, "you see, gentlemen." On another occasion Daubeny, holding up a bottle, thrilled his class by asserting that it contained a liquefied gas; and that, if he were to drop it, the gas would evaporate, and they would all be immediately suffocated. The next instant the vessel slipped and crashed to the ground, but—nothing happened. "John," demanded Daubeny, "why aren't we all suffocated?" Whereupon his ally confessed that before the lecture he had substituted distilled water for the life-destroying gas. It is not recorded how much John Harris knew of chemistry; but he certainly did know his man.

THE CIGARETTE.

MORE than eight and one-half billions of cigarettes were sold during 1910 in the United States; nearly one hundred cigarettes are produced and distributed every year for every man, woman and child among our ninety millions of people; nor are here included those "coffin-nails" that are rolled by the smokers themselves, or the imported brands. Imports of cigarettes are large; but comparatively little in proportion to the output of American factories. The *United States Tobacco Journal* considers that the enormous increase last year over the number of cigarettes smoked in 1909 (1,856,487,308) was in spite of an increase in the revenue stamp tax of 71 cents, and a widespread movement against cigarette smoking throughout the country. Denunciation seems to have increased the popularity of the cigarette. We do not in this place submit moral arguments against its use; nor do we here consider the cigar and the pipe; nor do we address the adult smoker, recognizing full well that the man who has attained his majority must work out his own destiny, and that after twenty-one tobacco (when used as cigars or in the pipe) is distinctly beneficial to many men. Our observations here are purely medical and have to do with the smoking of cigarettes by the lad, the adolescent and the youth.

Some years ago the late Dr. I. N. Love declared: "The numerous mental wrecks, youths who have come under my care during the last ten years, whose lives were failures, or who fill suicides' graves, impress me that to-day tobacco stands as the gravest danger confronting the new century, and the medical profession has a fearful responsibility in educating young men and their parents to appreciate this danger." Such observations and others of a like tenor, have been widely concurred in; there is now no little literature on the subject, some of which is a trifle hysterical; and anti-tobacco leagues and legislatures have taken action (sometimes ill-advised) in these premises. Nevertheless, in view of the statistics above given the general trend of sentiment against the use of tobacco by the immature must seem sound in essence.

Tobacco is one of the "paratriptics," one of the

savings-banks of the tissues; and there are many occasions of stress and strain when the adult needs its comforting and sustaining properties. Not so the youth, however, who has superabundant vitality, and needs no stimulant or restorative. Moreover the cigarette smoke is inhaled deep into the lungs, invading the most delicate tissues, whilst cigar or pipe smoke seldom gets by the epiglottis.

Among the baneful effects of nicotine (or the pyridine compounds into which it is converted) are those of the nervous system as evidenced by tremor, vertigo, giddiness, leg weariness, pains in various nerve-centers, amnesia, aphasia, psychic aberation and other symptoms referable to spinal or cerebral irritation; and especially such naso-motor paralyses as cold extremities, pallor, clammy hands and excessive sweating. Brunton (who made a most scientific investigation) found that at first nicotine powerfully increases the blood pressure and slows the heart; the arterioles are contracted, partly by reason of stimulation of the medullary naso-motor centres, partly because of the local action upon the arterioles themselves. This slowing is presently followed by the rapid pulse of heart-ganglior paralysis. The symptoms thus refertion; and especially such vaso-motor paralyses as cold regular and rapid pulse, precordial pain oftentimes severe and terrifying and very like angina pectoris). The myocardium may become impaired by constant contraction of the coronaries; this and the rise of blood pressure may lead to arteriosclerosis; a true angina may develop, as also a fatty heart.

Digestion is often impaired, much saliva may subconciously be swallowed by smokers who do not spit; especially in the neophyte does this occasion nausea, vomiting, flatulence and gastralgia. No doubt also the normal gastric secretions are thus diminished, hyperchlorhydria induced and the muscular tone in the digestive tract impaired. Tobacco may affect the nose and throat either by direct irritation or indirectly from dyspepsia or other c nstitutional disturbances.

Smoking produces, by local irritation, a catarrhal conjunctivitis, or the nicotine, when slowly and continually absorbed from the alimentary tract, may induce acute or chronic amblyopia. Jmpotence has been ascribed to tobacco. Those who work in tobacco are apt to suffer asthma, anemia, respiratory diseases and digestive disturbances. As we are here concerned mainly with the immature it seems relevant to consider the experiments of Vas upon puppies. By means of tobacco he induced anemia; the hemoglobin and the red blood corpuscles decreased over one-half; the solid residue and the alkalinity of the blood decreased a little, whilst the leucocytes were decidedly augmented.

By this presentation, and much else, we conclude that a substance which can, when persisted in, so profoundly affect the youthful organism, is likely to work destructive and permanent changes in his tissues and in his *morals*. And as to woman smokers of cigarettes!—?

Brief Sketch of the Author of the "History of Medicine."—Among the surprises in literature which occur now and then, one of the greatest of the century seems to be the critical History of Medicine by Dr. David Allyn Gorton.*

In medical literature, a long while ago, when authors were not so numerous, and productions not so prolific as they are now, surprises were not so uncommon. For example, the genius of Harvey, when it bore fruition, was a surprise to his colleagues. They refused to receive his work on the circulation of the blood, a work conceived in seclusion and developed in theprivacy of his library and laboratory. "Who is this barber-surgeon," said they, "that he should write of these things with such an air of authority?" Richard Bright gave his colleagues an almost equal surprise in his work on diseases of the kidneys. Bright was a quiet, unostentatious man, making no noise in the world, of whom no one had heard, so quietly had he devoted himself to his profession. John Mason Good, a man, "mother-taught," not college bred, gave the world a greater surprise in the publication of his "Study of Medicine." Good was a quiet, studious man, of scholarly tastes, who plodded for many years in silence between his literary work and his practice, known only to himself. Then came his great work on medicine, incomparatively greater than any that had preceded him. It gave him an immortality—to the surprise of all English-speaking people. Marshall College of Aberdeen honored itself in conferring the degree of Doctor in Medicine upon him, but a few years before his death, in 1827. Great workers in literature or science and philosophy rarely make much noise.

No author, certainly no American author, of modern times, has produced a work so remarkable in many respects as this. The work is the climax of the author's literary career. It is characterized by "painstaking scholarship and masterly knowledge of his subject," at least, so says a professional critic. As to the merits of the work the author is content to abide the judgment of his professional peers. It may not be uninteresting to our readers to know more about the character of the author and his qualifications for his great task. Although he has been a resident of Greater New York for more than forty years, and been in active practice for more than fifty years, his disposition is so modest and retiring, his manner so mild and unassuming, and habits so seclusive and studious as to keep his name from those outside the circle of his patients.

Doctor Gorton was a country boy of excellent parentage, born in Northern New York, near the wilds of the Adirondacks. There he received such advantages of a common school education as the

*Recently published by the Messrs. Putnam's Sons.

place afforded. At an early age he showed a passionate love of books; and as he grew into youth, devoured with avidity all the literature that he could lay his hands on. Soon after entering his teens a strong ambition to become a physician possessed him. To his relations it seemed a chimera. Nothing daunted by adverse criticism, he managed to obtain a human skeleton, which he carried about with him wherever he sojourned. In the course of a few weeks he could describe every bone in the body, its attachments, and relation, etc. At this juncture an opportunity presented itself to matriculate with Dr. Charles Francis Adams, who resided at New Woodstock, Madison County, New York, under whom he began a systematic study of medicine at the age of nineteen. The connection with Dr. Adams was fortunate. He was a man of scholarly acquirements, a fair Latinist, thoroughly imbued with the Theory and Practice of medicine; a good chemist and pharmacist for that day, with intense hatred for everything not regular in medicine. Here the young aspirant for the profession studied Latin, Greek, Chemistry and Botany, and acquired some knowledge of making pills and powders, elixirs, tinctures, infusions and other concoctions. Here, too, the student acquired some knowledge of Latin—enough to translate his master's diploma, which was from the Albany Medical College.

During young Gorton's stay at New Woodstock under Dr. Adams, he was indefatigable in his studies of general literature, especially of biography of the masters in medical history. He was particularly fond of controversy, and tenacious of his opinions. This characteristic stood him in good stead. Soon after going to New Woodstock, he induced several young men of that town to join him in founding a debating society to discuss recondite and other problems. The society proved a great success. Leading citizens from nearby neighborhoods attended these meetings, and participated in the debates. Grave subjects came under discussion, many of them beyond the calibre of the youthful intellect, such, for example as "Freedom of the Will," "Human Destiny," "The Limitations of Individual Responsibility," "Are there plurality of mental functions?" as stated by Gall and his followers. Full houses usually attended these discussions, and often could be witnessed bitter contest among partisans on both sides. They constituted a mental training school, of great importance to our youth's career.

"Even at this time, in Gorton's career," writes one who knows him well, "independence of thought was to him the highest birthright, the most glorious privilege, the sternest duty to maintain. Every awakening of conscience to new truths met with recognition. His maxim was Intellectual Freedom—free to believe to-morrow what he disbelieves to-day, or vice versa. And thus he lived through his teens, a serious, earnest, conscientious critic of events, medical, theological and religious, meekly obedient to the delusion of being guided by mystic influences outside himself, but which he now knows to have been the illuminating lamp of an excellent heredity, which led him straight to the goal of his ambition."

Having finished his course with Dr. Adams in 1856, young Gorton went to New York and entered Bellevue Hospital, attending the clinics and lectures at that institution during the following year. The distinguished surgeon, Dr. James R. Wood, was then in his zenith. Meantime young Gorton matriculated as a student of Dr. Russell T. Trall, attending at the same time lectures at the New York University Medical College, particularly the lectures of Prof. Martin Paine on "Institutes of Medicine" and Materia Medica, and made it convenient to visit the surgical clinics of the distinguished Dr. Mott, of the same college. He had already made the acquaintance of that erratic genius, Dr. Russell T. Trall, a man of great ability and erudition, and a devotee of Hippocrates and the principles which he enunciated, though irrevocably averse, or oppugnant to the heroic practice of treating disease then in vogue.

Water Cure and Grahamism were at this auspicious time claiming a large share of public attention in New York, and Dr. Trall embraced both with all the ardour of his impetuous nature. The young student, Gorton, was captivated by this man and shared his enthusiasm for the reform of medical practice. Like other heroes in medicine, of partial or defective vision, Dr. Trall conceived the idea of founding a new school of medicine, with himself at its head, in which should be taught his views of Hydro-therapeia and Hygiene in the treatment of all diseases of a non-surgical nature. Gorton became his pupil and fellow-worker in the establishment of such a school of medicine, the name of which was to be known as The New York Hygeio-Therapeutic College, a charter for which, with all the rights and privileges of the regular schools of medicine, was obtained from the legislature in 1857. In this institution Gorton formally matriculated and was among the first to receive its degree of Doctor in Medicine.

Soon after this event, our author, who was then Dr. Gorton, was appointed to the Chair of Chemistry and Physics in his Alma Mater, which had been vacated by the learned Prof. Reubens. This Chair was held by him for two years, when a difference of medical opinions between him and the President, Dr. Trall, caused the former to resign and to take up the general practice of medicine.

About this time, we must not omit to say, Dr. Gorton fell in with the "Organon of Medicine" of Samuel Hahnemann and became infected, not very seriously, with some of that author's ideas, especially of dosage and the action of medicaments. Naturally, this brought him into relations with Homoeopathy and Homoeopathists of which New York was the stronghold. Although accepting the maxim "Similia Similibus Curantur" of Hahnemann, Dr. Gorton never abandoned the maxim of the revered Father of Medicine, the vis medicatrix naturae, nor Galen's contraria contrariis curantur, but maintained that all had their place in the philosophy of medicine. So far as the action of medicaments was concerned, he held that nature determined such action regardless of any theory laid down by system-builders. Nevertheless, he found more agreeable companionship among the Homoeopaths, joined their societies, and continued under their flag for the greater part of his career, although, while mutual respect

subsisted, there never was between them a sympathetic fellowship. The "call of the blood" was too strong, and he finally gravitated back to scientific medicine.

Dr. Gorton has ever been a student, a tireless student, in every branch of science and philosophy. For the first decade of his professional life he was never without a tutor, coming once a week and staying from eight o'clock till midnight. Such knowledge as he has of the languages, Latin, Greek, German and French, he acquired by the aid of tutors, some of whom were distinguished scholars, as Prof. Schmieder, who was a master not only in language and literature, but also in science and philosophy.

In 1871 Dr. Gorton was elected a member of the Medical and Surgical Staff of the Concord Street Maternity (Brooklyn), and in 1873 took an active part, under the lead of the lamented Dr. Albert E. Sumner, in founding the Training School for Nurses at that institution—the third school of that kind ever established in the United States.

Having by nature and cultivation a facile pen, Dr. Gorton has been a voluminous writer, a fact which he seldom spoke of and preferred to keep secret lest it might injure his practice. It was about twenty years ago—or in 1890—after retiring from the "National Quarterly Review," that he conceived the idea of writing the Evolution of Medicine on a plan of his own—such a plan as all history should be written upon he maintains—that is to say, critical and philosophical. He at once began to collect and to collate material for it. This plan he has consistently carried out from the beginning to the end of his History of Medicine, seeking to unfold the evolution of all the sciences related to medicine and to man, and to set forth the Institutes of the subject as disclosed by the light of modern science.

Great works on the history of Medicine have been written before, but none so late as to meet the needs of the profession of to-day. There is Le Clerc's monumental work on the subject in one large quarto volume in old French, the last edition of which was published in 1723. There is also Kurt Sprengel's erudite history of medicine in nine volumes, but of less value than Le Clerc's, which was given to the world in German in 1800. These two great histories of medicine are perhaps the greatest of the kind in any language. They are very rare. The author, while in Paris a few years since, was fortunate enough to secure old copies of each work, and to them he is indebted for much information as to the early annals of medicine which would have been difficult to find anywhere else. No recent work of commanding interest, on medical history has been written. This, however, is not at all strange. Such a work could not have been written except by a physician; and the practitioner is too busy with his cases and too weary of his labors as a rule to prepare himself for historic research. It is claimed for Dr. Gorton's work that it embraces the good points of Le Clerc's, and is at the same time more comprehensive, giving a fuller and more philosophical account of medical discoveries and hypotheses, as well as making a keener analysis of the character of the men whose unselfish labors have brought the art and science of medicine to its present commanding position.

It should be remembered that the Nineteenth Century is incomparably the greatest siecle of science and discovery the world has seen. Text-books of medicine of the last decade have mostly lost their value in this. We cannot understand, therefore, how any physician mindful of his dignity as a professional man of the Twentieth Century can afford to deny himself the advantages of this latest and most comprehensive work by Dr. Gorton.

Dr. Gorton's love for the art and science of medicine has been such as to make him sensitive to its dignity. He has always looked upon medical sects and schisms as a scandal to science. He was early associated in the work with Dr. Guernsey and others in behalf of medical union. His writings on that subject would make a volume. He has never ceased to maintain that the Hippocratian banner was broad enough to cover all thoroughly educated students of medicine, and regretted that there should be a trinity of schools, all having distinct medical colleges and hospitals; and he took occasion to decline to assist in raising an endowment fund for the New York Homoeopathic Medical College unless it would establish a Chair of "Old School" Materia Medica and Toxicology in its curriculum. This the Faculty declined at first to do, but a few years later acted upon the suggestion. Moreover, he was the first to suggest the propriety of calling Insane Asylums, Hospitals—"Hospitals for the Insane," which should be so equipped as to be able to treat insanity as a physical disease, since brain and mind are one, and the causes of deranged mentality are as often physical as psychical, that is to say, as often arising from disordered bodily functions as of brain functions. This was an all-important suggestion, and of the widest import, but as yet has only partially been acted upon.

Moreover, Dr. Gorton was the first to point out the importance of State and National Boards of Health (about 1870); the first, also, to suggest sunparlors or sanatoria in private dwellings as well as in hospitals (1874). Elaborate essays on these vital themes were written by him and published in the "National Quarterly Review," the former in 1872, the latter in 1874.

The profession of medicine hardly needs to be reminded of Dr. Gorton's work on the "National Quarterly Review," the forty volumes of which constitute a small library of classic and scientific literature. His contributions to that work, while under the editorial care of Edward I. Sears, LL.D., are among his best writings, though the knowledge of them in connection with his name never reached the public. History, Biography, Science, Philosophy, Political Economy, Ethics, and Statecraft, were some of his themes. After the death of Dr. Sears, Dr. Gorton took up the task laid down by his friend, in accordance with his last request. That was in 1876. To this request Dr. Gorton thought it his duty to accede. He assumed the charge and continued his editorial supervision for nearly a decade. With two or three exceptions, his contributions to that quarterly were anonymous, and imposed a heavy burden, extending during the most active period of his medical practice.

And here this sketch shall end, though by no means concluded. Dr. Gorton insists that enough has been presented of his work and career to justify him in undertaking unaided, to write the philosophical and critical history of medicine. His life-work and training have culminated in this great task, and logically fitted him to perform it. What greater preparation could he have had? He is not permitted to doubt that the learned and open-minded members of the profession of medicine of any school or following will fail to recognize and appreciate the value of a work which was written for them and dedicated to them.

BIBLIOGRAPHICAL

A Text-Book of Surgical Anatomy.—By William Francis Campbell, M.D., Professor of Anatomy at the Long Island College Hospital. Second edition revised. Octavo of 675 pages, with 319 original illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $5.00, net; half morocco, $6.50, net.

The author's purpose in this work is to present a book which will aid the student and the practitioner, in mastering the essentials of practical anatomy, by selecting and correlating those facts which have a practical bearing, and emphasizing those regions which have a peculiar interest for the surgeon. The manner in which the work has been received and a second edition demanded, shows that the effort has been appreciated.

The present edition shows some additions and corrections, in order to make the text more complete and exact.

There is no question as to the great value of the work.

The text is elaborately illustrated for practical purposes.

No mistake can be made in adding this book to any medical library.

Diagnostic and Therapeutic Technic.—By Albert S. Morrow, M.D., Adjunct Professor of Surgery, New York Polyclinic. Octavo of 850 pages, with 815 original line drawings. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $5.00, net.

In this volume the author has brought together and arranged in a manner easily accessible for reference a great variety of procedures employed in diagnosis and treatment of surgical cases.

The majority are of every-day practical use to the hospital interne or to the general practitioner.

In this respect the book is unique, and the purpose is well met.

The text is fully and practically illustrated at great expense in every way.

The work will be found of the greatest service to thehospital interne and to the general practitioner who is compelled to do surgical service, and to these we unqualifiedly commend it.

It is a superb hand-book for its purpose.

Progressive Medicine, Vol. I, March, 1911.—A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, 355 pages, with 18 engravings. Per annum, in four paper-bound volumes, containing over 1,200 pages, $6.00, net; in cloth, $9.00, net. Lea & Febiger, Philadelphia and New York.

This standard publication, so well and favorably known, continues to maintain its high standing. The contributions are, as usual, of great interest, and bring the respective subjects thoroughly up-to-date.

The present volume contains the following articles: Surgery of the Head, Neck and Thorax; Infectious Diseases, including acute rheumatism, croupus pneumonia and influenza; Diseases of Children; Rhinology and Largngology,a nd Otology.

Practical Dietetics, With Reference to Diet in Disease.—By Alida Frances Pattee, graduate, Department of Household of Arts, State Normal School, Framingham, Mass. Late instructor in dieteties, Bellevue Training Schools for Nurses, Bellevue Hospital, New York City. Sixth edition. Enlarged and revised to meet the exact requirements of the various Boards of Examiners of Nurses. 12mo. cloth. 550 pages. Price, $1.50, net, postpaid. A. F. Pattee, Publisher, 134 South First Avenue, Mt. Vernon, New York.

This book deals with the preparation of appropriate food for the sick and convalescent, giving in detail the method of preparing and administering liquid, semi-liquid, and solid nourishment.

It contains diet lists and tells what foods to avoid in various diseases, also gives the proper diet for infants and children as advised by leading physicians and hospitals.

A Text-Book of Gynecological Surgery.—By Comyns Berkeley, M.A., M.D., and Victor Bonney, M.D. Large octavo, cloth, 720 pages, 392 black and white illustrations, and 16 colored plates. Price, $5.00, net, by mail, $5.25. Funk & Wagnalls Company, N. Y., 1911.

This book is concerned wholly with the operative side of gynecology and is a record of personal methods based upon large hospital experience.

The text sets forth in detail the indications for operations, the pre-operative treatment, and the dangers to be avoided, with the possible complications and their appropriate treatment. The profuse and practical illustrations will be found most helpful in elucidating the text.

Dr. Berkeley is Gynecologist and Obstetric Physician to the Middlesex Hospital, and Senior Physician to the City of London Lying-In Hospital, and surgeon to the In-Patients at the Chelsea Hospital for Women. Victor Bonney, M.D., is surgeon to the Out-Patients at the Chelsea Hospital.

The work will be found a most convenient handbook for its purpose.

Studies in the Psychology of Sex—Volume VI, Sex in Relation to Society.—By Havelock Ellis. Octavo, 656 pages. Price, $3.00. Philadelphia: F. A. Davis Company, 1911.

In the previous five volumes of these studies, the author has dealt mainly with the sexual inpulse in relation to its object, leaving out of account the ex-

ternal persons and the environmental influences which yet may powerfully affect that impulse and its gratification. The text is written upon the highest moral plane.

The present volume deals with the relationship of the sexual impulse to third persons and to the community at large, with all its established traditions.

In discussing these questions which are considered largely matters of social hygiene, the psychological point of view has been maintained.

The author has endeavored to maintain a strictly objective attitude, and to be governed by facts so far as possible. He has done a great work, and it is worthy of the study of all who are interested in the subject.

These books are not allowed to be sold in England, because they are not considered proper for the general lay reader.

A Text-Book of Chemistry for Students and Practitioners of Medicine, Pharmacy and Dentistry.—By Edward Curtis Hill, M.S., M.D., Professor of Applied Medical Chemistry in the Medical Department of the University of Colorado, Denver, etc. Second thoroughly revised, rewritten and considerably enlarged edition, with 100 illustrations in the text and 14 full page half-tone and colored plates. Octavo, 659 pages. Price, $3.25. Philadelphia: F. A. Davis Company, 1911.

This book is suited to students and practitioners of medicine, pharmacy and dentistry. It is an excellent guide to a reasoned understanding of underlying principles, and a handy reference book in applying scientific facts and analytic methods in daily work.

The text has been brought thoroughly to date. New and original tables and colored plates have been added.

Sanitary chemistry, physiologic and pathologic chemistry and clinic chemistry are included, and there is an appendix covering solubility of common drugs and other practical subjects.

The book will be found of great service.

Hand-Book of Diseases of the Eye—A Text-Book for Students and Practitioners.—By Harry Caldwell Parker, M.D., Clinical Professor of Ophthalmology, Indiana University School of Medicine, Indianapolis, etc. Illustrated with 115 text engravings, a half-tone frontispiece and 5 full page chromolithographic plates, with 26 figures. Octavo, 303 pages. Price, $2.00. Philadelphia: F. A. Davis Company, 1910.

This little book for the student and the busy practioner is superb for its purpose. It is concise and to the point.

Bacteriology, refraction, tuberculosis and the relation of the eye and the nose have been considered, and there is a formulary of forty-one practical prescriptions.

The text is excellently illustrated. The book is not for the specialist, but for the student and the family physician, and the author has shown himself well prepared to do this work.

Refraction and Motility of the Eye With Chapters on Color Blindness and the Field of Vision, Designed for Students and Practitioners.—By Ellice M. Alger, M.D., Adjunct Professor of Ophthalmology of the New York Post-Graduate Medical School, etc. With 133 illustrations. Octavo, 380 pages. Price, $1.75. Philadelphia: F. A. Davis Company, 1910.

This work is the result of long experience in post-graduate teaching and is designed to meet the requirements of the general practitioner and the embryo ophthalmologist.

An excellent hand-book for those who are rusty in physics, anatomy and physiology of the eye, and for those who are about to take up post-graduate work. It enables one to master the principles of which it treats, at home, and fits the student to accomplish his studies with greater ease and with great saving of time.

We heartily commend the book for this purpose.

A Manual of Cystoscopy.—By J. Bentley Squier, M.D., Professor of G-U Surgery, New York Post-Graduate Medical School and Hospital, etc., and Henry G. Bugbee, M.D., Instructor in G-U Surgery, New York Post-Graduate Medical School and Hospital. With 26 original plates, 18 of which are colored. Octavo, flexible leather, $3.00, net, sent prepaid on receipt of price. New York: Paul B. Hoeber, 1911.

This book has been written in response to repeated applications from students for a short practical work on cystoscopy.

The statements are concise, and the technique described in detail is that which has been found most satisfactory after a thorough trial of other methods. While the essentials of a working knowledge of the instruments are set forth, the book has been kept within small compass.

The feature of anatomical diagrams accompanying the principal bladder landmarks, as depicted through the cystoscope, will be of great value to the beginner, and the colored plates of intra-vesicle lesions are particularly accurate, having been produced under the direct observation of the artist.

New York Charities Directory.—Compiled by S. Eldredge. Published by the Charity Organization Society, 105 East Twenty-second Street, 1911.

This directory, issued annually, is intended to be an authoritative, classified and descriptive reference book of the social, civic and religious resources of all the boroughs of New York City, and it will serve as a guide to the workers among the poor, as well as being suggestive to those who desire to deetermine the charitable resources and needs of the city.

It is a most valuable book of reference for those engaged in social work, and especially for students of social subjects and movements.

It will also be found of service by physicians when seeking a place for a special patient,, charity or otherwise. It contains a vast amount of useful information.

Copies may be obtained from the Society.

Clinical Treatise on Inebriety.—By T. D. Crothers, M.D., Superintendent, Walnut Lodge Hospital, Hartford, Conn. Editor of the Journal of Inebriety, etc. Octavo, 365 pages. Price, $3.00. Harvey Publishing Company, Cincinnati, O., 1911.

This work is the first medical and scientific study

of inebriety and alcoholism from a practical and clinical point of view. Other works have given different phases of the subject more or less prominence, but no one book in the English language presents so general an outline view of the physiological, psychological, therapeutic and clinical aspect of inebriety and alcoholism.

No subject comes up for counsel with greater frequency, requiring medical advice, discretion and judgment as that of alcoholism and inebriety. This book presents a clinical study of the facts relating to the drink problem from the scientific side with special reference to disease and the very questions of prevention and cure.

No one is better prepared to do this work than the eminent, veteran author. He has urged from the first that the problems of inebriety and alcoholism were diseases and neuro-psychosis, and were bith preventable and curable; he has urged that the alcoholic problem was a medical and hygienic one which must be settled by physicians, and only from accurate scientific study of the facts.

We commend the book to all who are interested in its subject.

Modern Diagnosis and Treatment of Diseases of Children—A Treatise on the Medical and Surgical Diseases of Infancy and Childhood, with especial emphasis upon Clinical Diagnosis and Modern Therapeutics for Practitioners and Students of Medicine.—By Herman B. Sheffield, M.D. (Co-author of Practical Pediatrics). Instructor in Diseases of Children at the New York Post-Graduate Medical School and Hospital, etc. With 150 original half-tone photo-engravings and numerous smaller illustrations, some in colors. Octavo, 619 pages. Prices, $4.50. Philadelphia: F. A. Davis Company, 1911.

This book is a clinical treatise on the subject of diseases of children, based upon a large experience, and will be found not only quite original in its methods, but of very great service to those for whom it is prepared, as a real hand-book.

There is no "padding," it is all practical material, including ample illustrations.

There are side-notes to facilitate references, and special chapters devoted to physical diagnosis and semeiology, general and special therapeutics, and other matters of great importance.

We should advise any reader, who requires a book on this subject, to inspect this before deciding.

Memoranda on Poisons.—By Thomas Hawkes Tanner, M.D., F.L.S. Eleventh revised edition. By Henry Leffmann, A.M., M.D., Professor of Chemistry in Woman's Medical College of Pennsylvania, etc. 16mo., 167 pages. Price, 75 cents. Philadelphia: P. Blakiston's Son & Co., 1911.

This standard little book known to every practitioner of medicine has reached the eleventh edition, and has been brought up-to-date in every respect. In the revision, much new matter has been added, and some has been omitted, so that the bulk has not been increased.

The toxicology of poisonous food is the most important new matter.

Every practitioner should possess a copy.

The Blues (Splanchnic Neurasthenia) Causes and Cure.—By Albert Abrams, A.M., M.D. (Heidelberg), F.R.M.S. Consulting Physician, Denver National Hospital for Consumptives, etc. Fourth edition revised and enlarged. Illustrated. 8vo., 295 pages. Price, $1.50. New York: E. B. Treat & Company, 1911.

This book calls attention to a new and heretofore indescribed variety of nerve exhaustion, which the author designates Splanchnic Neurasthenia, and is quite amenable to treatment.

The present edition embraces an addition which states that "concussion of definite spinous processes is one of the most potential methods for eliciting certain vertebral reflexes, which the author has more fully elaborated in his recent work on Spondylo Therapy." It is claimed that a knowledge of this subject will prove of great value in the treatment of disease, notably Splanchnic Neurasthenia. The subject is worthy of study.

CORRESPONDENCE

INSANITY AS A LEGAL DEFENCE.

To the EDITOR:

After years of legal fencing, the status of the expert testifying upon the question of alienation still offers a decided difficulty.

No expert—expert in the right sense—would dare to differentiate in the diagnosis of private cases in the time and with the facility which is shown on occasion in our courts.

How, then, when a prisoner is accused of a crime, shall the question of his mental health be established, without an undue delay and expense to him and the community?

Primarily, it is a matter of determining not the sanity or insanity of the prisoner, which is the mistake of procedure sanctioned by custom. On the other hand, what *is* needed is to know this: Whether the prisoner, sane or insane, could control the commission of his act.

Acts may be divided according to their voluntary or involuntary nature:

1. Voluntary (conscious), a, purposeful; b, careless; c, perverse.

2. Involuntary (conscious), a, purposeful (as heart beats); b, subconscious (as pancreas acts); c, tremors, tics; d, surprised responses; e, general emotions, overpowering.

3. Involuntary (unconscious), a, unwitting (as in sleep-walking); b, idiotic (as in amentia); c, demented and perverse; d, paranoiac and perverse; e, absent-minded acts; f, instinctive acts.

With a recognition of the sensory basis of mental alienation, we can realize the need of establishing the fact whether or not the accused could or could not have refrained from his act; regarding the fore-going classification of those responses to stimulus.

What he may or may not have thought the act would do and whether or not he believed it right to perform the act is a secondary question, wrongly considered first, in the form of asking if the accused knew what he was doing.

A man with chorea, with any *tic convulsif*, is con-

scious of his *involuntary* acts, just as keenly as he knows his blood is beating in his heart. But can he by Will inhibit chorea? Would that he could!

By the same reasoning, we can establish series of purposeful or careless or perverse acts initiating in the cerebral mechanism, but not under the control of the still *sane* consciousness. For sanity has a distinctly sensory basis, and implies a relation with the world about us, and a power to think regardful of the processes of thought in others, and the processes of being in the material world. A cerebral defect interfering with memory of this, or with acts arising from this may or may not become a cause of insanity. If the patient realizes the defect in his sensory-complex he maintains a mental integrity. If he does not so realize, he is insane.

To prevent insane acts we need a social confession bureau, a place to which those in mental stress can go. Here, instead of turning away the cranks and the crank-letters, the fools, the enthusiastic, the socially-injured, we should receive them and *hear them*. We ought to hear them to their heart's content. We could investigate and ascertain what basis of fact may underlie their complaints or wishes.

Our methods of tearing up their letters and sending them off, in disgust, is almost criminal on our part, if not also insane (as it certainly is cruel, at least). By our neglect we irritate them. And if they are insanely turned, may develop a criminal act.

The habit of locking stable doors after horses are stolen is a present one.

A Bureau of Social Investigation should have one joined to it for providing suitable employment for every one. With what expense this might involve we could offset the money now expended for trials, jails, reformatories, and asylums, for a heavy interchange would ensue.

No insane person is benefitted by tactless arguments, since it is precisely the rationale of that argument which he fails to grasp, by reason of his state. On the other hand, even insane people have reasonable desires, and when these are gratified they live contentedly and become harmless. Insane people understand superior force. Why not allow such a force to appear to them as a beneficent and happy influence?

Returning to the question of criminal procedure. It is a sober fact that a man accused of doing an act which he performed in haste or fear will bring himself to believe that the act was *insane*. He will plead so. The nature of the act may bear him out. Experts can find in any man incarcerated and in fear some mental alienation.

But the fact of the power of the man to control his acts or not, is the capital one.

We need to study the brain for the seat of the attentive power. There must be some point at which the combinations of sensory and motor groups are selected. In insanity, in delusional states (sane or insane), in hysteria, and in psychoses generally, the mental field is retrenched. This implies some change in the attentive power in

a, scope; b, intensity; c, in impulse or choice.

Until this has been objectively delimited we must adopt some method of precedure sufficient for the time being.

A third pleading is needed, namely: *Not guilty,* on account of provocation or mental excitement, although *sane.*

Immediately this will simplify the procedure. A civil suit for damages both to the community and to the individual would now lie.

Allowing the plea of Not guilty, under provocation, the jury, as judges of questions of evidence, would decide the extent of provocation. Fixing the degree of this as: complete, partial, or not shown, the matter of retribution would become simpler.

If a plea of insane is offered, instead of antagonizing it, we should accept it at once. But no subsequent relief from its confession of lack of self-control should be lightly permitted. On the contrary, it would be well to restrain any person during his natural life who resorts to the plea of insanity after a criminal act, unless it can be shown that the insane condition was due to remediable causes.

Action for civil damages should follow criminal acts so conditioned (by insane acts due to remediable causes).

A recommendation of this third plea would remove a great expense from the community, and restore the power to tell the truth to numberless persons who do not care to become instrumental to any one's suffering for the faults of another.

T. H. Evans, M.D.

Freeport, N. Y.

BATHS IN NERVOUS DISEASES.

To the Editor of The Medical Times:

The indiscriminate prescription of hydrotherapy in neurotic states has done much harm; and yet no measure has a more beneficial influence than a bath when prescribed in the proper situation. The calming influence of the warm bath in agitated mental states extends even to the insane. It should not be forgotten, however, that the effect of a bath is a physical one, and it should never be used for its so-called "suggestive" effect. The systematic use of the cold douche in treating hysteria is a barbarism. It is true that a cold douche may stimulate the attention; but it does so towards the unpleasant sensation of the douche and not toward the matter which causes the morbid symptoms. It is thus, if anything, harmful to the patient's mind; and this is hardly compensated for by any benefit to his body. The cold bath is indicated in certain neurotic states of which indolence is a feature; but it should be prescribed with the definite indication of removing lethargy, and should be supplemented by other methods with the same end in view.

I need not enter into the eliminative effects of warm baths, for they are well known; and I am not satisfied that the application of dry heat by air or electricity has any particular advantages over hydrotherapy in this or other respects, except perhaps when intense heat is required in a circumscribed region.

The use of the bath to minimize tension and strain of the muscles in the course of the meningitis of poliomyelitis must not be forgotten (Report of New York Committee, Monograph Series, 1910); and the suspension of the body in water, too, greatly facilitates the first feeble movements during recovery from that disease.

Tom A. Williams, M.D., C.M. (Edin.).

Washington, D. C.

MUNICIPAL HOUSING PROBLEMS.

To the EDITOR:

With great interest have I perused Dr. John B. Huber's article in the March issue of your esteemed journal, and it will be easily seen why I was interested: In a correspondence published in the N. Y. Medical Journal of November 5th, 1910, Phymatiasis (tuberculosis) and Bedbugs, I said: In different papers I have called attention to the custom in English speaking countries of having dark bedrooms and of nailing the carpet to the floor. The public should be educated to abhor both these evils, as well as that of living in the basement. All these English institutions are contrary to modern hygienic principles.

Not only is the medical profession now alive to the importance and possibility of exterminating "tuberculosis" (barbarously so called), but world-wide efforts are now being made to arouse the general public to a like sense of this possibility and of the methods by which we may reasonably hope ultimately to effect it. But how can these hopes, these promises, be fulfilled, so long as the carpet is nailed to the floor, thus preventing cleanliness and affording a fortress in which germ conveying insects can impregnably entrench themselves; so long as millions of poor devils are deprived of light and air in their dark bedrooms; so long as bedbugs, lice, and other germ carriers are not exterminated as well as flies?

Dr. Huber speaks of the continuous canyon walls which exclude light, sunshine and pure air, of dark poorly-lighted rooms where artificial light must constantly be used, however bright the day without, he mentions the tenements which are occupied and slept in night and day and used for all purposes of domestic life and where there are dark bedrooms. He says: "The exclusion of light, pure air and sunshine from living apartments, especially in buildings facing on narrow streets, would mean the inception and prevalence of disease among the tenants, increasing progressively with the age of the building. How luxuriantly would tuberculosis, the bedroom disease, flourish in such congenial environment."

Dr. A. Sudekum, the expert and statistician, who during a recent brief stay among us has, as Dr. Huber informs us, compared housing conditions in German cities with those in the United States and has found that Germany has advantages over us by reason of the greater power of her public opinion, that in Germany things that are customary here would not be tolerated.

One night I was called to a town in Westchester County of 5,000 inhabitants. I had missed the last train and asked a watchman to bring me to a hotel. He not only brought me to a hostelry but even gave me a room without having disturbed anybody in the house. This room had no window and for the first time in my life I had to sleep in a dark bedroom. Remarkable seemed to me the circumstance that the building stood on a large square. I could not recollect having ever seen or heard of a dark bedroom in Germany, and now, after having spoken so much against them in this country, I investigated the matter. Reichs Archiv-Rat Dr. Striedinger of Munich had the extreme kindness to send me the following informations together with a volume containing the Building Laws for Munich. A uniform building law for all parts of Germany does not exist, however, such a uniform law does not appear desirable on account of the different conditions in differeent sections of the empire due to climate, building materials and history. It is not even required that a federal law (Reichsgesetz) should establish the sanitary demands in regard to the limit of what is to be observed in building, because there exists no part in all Germany in which not such a minimum of absolutely necessary precaution is not already demanded by law and there is no fear that such demands should be reduced anywhere. Throughout Germany it is indispensible that dwelling rooms and sleeping rooms must have at least one window which leads in the free open air. To prove this, Dr. Striedinger writes, "I should have to send the thousand different official books giving the building laws of the different states, provinces, precincts, cities and towns. This being impossible, I confine myself to mail to your address the building laws of Munich. Permit me to say that these laws are the best, based on the most modern principles, and at the same time the strictest of any. In most other large cities the ordinations are somewhat milder but the difference is insignificant, and in the principles there is uniformity."

I beg to quote now from the Muenchner Bauordnung, published in 1911: "All rooms to be inhabited or occupied, by persons, such as dwelling and sleeping rooms, work shops, kitchens and water closets as well as staircases, stables and wash kitchens must have at least one window, of sufficient size and of suitable situation, which leads in the free open air. Rooms destined to be occupied by a larger number of persons or in which a greater contamination of air takes place, must have special arrangements to secure sufficient change of air."

I confine myself to the fact that there are no dark bedrooms in Germany. I do not wish to compare the housing misery of the overpopulated parts of our country with that of German cities, because I can judge only from what we read in German medical journals, according to their descriptions, however, the misery in their overcrowded dwellings of the working classes is far greater than the misery in the quarters of the same classes in large American cities.

A. ROSE, M.D.

March 3, 1911,
173 Lexington Avenue, New York.

Colitis.—G. D. Kahlo (J. A. M. A., Feb. 11, 1911) well emphasizes the neurotic factor in vast cases. Some sort of neutral depression is a very constant feature. Most symptoms are due to auto-intoxication, since they usually disappear as soon as the digestive disturbance is relieved; yet many symptoms may be due to the underlying neurosis. Colitis is most commonly complicated by gastric disorders. Treatment should be individual; there is no set rule. Practically all cases for which appendicectomy and celiectomy are recommended can be cured by medical therapeutics. Kahlo quotes Richardson: "Operations on the neurasthenic return nothing to the patient; her last state is worse than her first, and is often pitiable; the best rule is to forbid surgery until every medical and palliative measure has proved useless.

RETROSPECTIVE

PATHOLOGICAL RELATIONS OF THE URINE TO MENTAL AND NERVOUS DISEASES.

In the diseases of the nervous system to which the term "functional" is applied, quantitative changes in the urine are often observed. Not much can be said about the qualitative relations. The cholestearin tyrosin and leucin the only excrements which are exposed to specific changes.

Attacks of hysterical excitement are followed by copious polyuria of short duration and in all patients of the neurotic type any nerve tension may induce a milder degree of polyuria which may continue for days or for weeks. In such cases the urine is light in colour and of low specific gravity, differing from the normal excretion only by its extreme dilution. Less frequently, on the other hand, oliguria may occur; even complete anuria may occur. Professor Kraepelin of Munich mentions a case where a woman patient only four times during a whole year had passed each time about 3-4 ounces of urine. There was no albumin, no sugar, no casts, just a few epithel cells of the urinary bladder.

In some cases of neurasthenia a different condition of the urine is met with. De Fleury (Bull. Gen. de Therap., 1900) observed diminution in volume, with moderately high specific gravity, and excess of uric acid in relation to urea, and of earthy phosphates to the alkali phosphates; he also noticed an increase in the chlorides and lowering of the oxidation coefficient.

In severe cases Bechterew (Neurologisches Centralblatt, 1899) also found more or less diminution of urea, and in most cases, great excess of uric acid; the relation borne by the total nitrogen of the urine to the urea-nitrogen indicated a marked depression in the activity of the nitrogenous oxidation.

I found in cases of epilepsy, while a physician and pathologist of the Clarinda State Hospital for the Insane, before the attacks the urea very low, after the attacks it reached the maximal point, beside phosphates in millions, also kidney epithelium. I had observed a case of epilepsy, where a 23-year old young lady was in epileptic delirium continuously for 10 days, the urine was taken from her by catheter, but no changes qualitatively were observed in the specimen. The colour was red permanently.

The late Professor Mendel, of Berlin, found in the early stages of melancholy the specific gravity 1015-1030, it was never constant. He says, to mention his own words:

"Die festen Bestandtheile zeigen in der Regel eine groessere Menge Phosphate; Harnstoff und Chloride pflegen nicht in demselben Grade vermehrtzu sein. Im maniakalischen Stadium tritt nicht selten eine groessere Harnmenge auf, und entsprechend der gesteigerten Nahrungsaufnahme finden sich mehr Harnstoff und Chloride, als bei gesudnen Individuen."

Merson (Urinology of General Paralysis, Journal of Ment. Science) found in maniac cases the urea increased, sulphuric acid normal, but the quantity of 24 hours very little.

In cases of dementia præcox the quantity of urine is decreasing rapidly, as reported by Lailler, Donath and Sarbo of Budapest, Hungary.

Rabenay found albumin in cases of Paralysis, day and night but never casts. Richter and Rabow's reports show the same results.

Schuele report a case of dementia paralytica with diabetes mellitus.

After attacks of epilepsy, traces of albumin and very exceptionally of glucose may be present in the urine. By keeping epileptics exclusively on milk, which contains rather less than a gramme of sodium chloride in the litre, Roux (Compt. Rend. Soc. Biolog., 1900) demonstrated the accuracy of Richet's and Toulouse's statement that in epilepsy the efficacy of potassium bromide is increased by diminishing the intake of chlorides. Schlooss also found that the number of attacks is lessened by the simultaneous administration of bromides and of food that is poor in chlorides; but that the body weight is reduced and the patient becomes weak; without the bromides, no effect is produced on the frequency of the attacks by milk diet. In several long standing and severe cases of epilepsy, Andenino and Bonnelli (Giornale d. R. Accad. di Med. di Torino, 1902) found that after the attacks there was little if any increase in the earthy phosphates of the urine, but that a considerable excess of calcium was present in the feces. On the other hand, in recent cases, they found that excess of earthy phosphates occurred in the urine, but not in the feces, and that simultaneously with the absorption of the calcium the motor attacks ceased. Inouye and Saiki (Zeitschrift f. Phys. Chemie, 1903) found a large amount of lactic acid in the urine after attacks of epilepsy, which they attribute to diminished supply of oxygen during the attacks, and not to deranged liver function.

Hupper (Virchow Archiv,) found always albumin and cylinders after the epileptic attacks, also in cases of apoplexy. Also blood corpuscles in large quantity. Koenig found this condition only once, but high specific gravity. Hupper found also sugar in apoplectic cases. Mendel never observed sugar, but the quantity was increased. Simon found 4,500 ccm. in 24 hours. The specific gravity in this case was 1015. We find no records in Charcot's Clinic, only about the specific relations of phosphates to the anatomical disturbances in cases of paralysis, epilepsy and mania, but those records never have been published.

Mendel says that the pathological changes of urine in mental diseases depend much on the changes of the menges, of the same opinion was Charcot.

Koenig says: "das hohe specifische gewicht ruehrt von dem von linstow behaupteten gehalt an phosphorsauren salzen."

In various forms of mental derangement, delirium tremens, paranoia and melancholia, sugar has been found in the urine. In five out of 21 cases of melancholia, Arndt (Deutsche Zeitschrift f. Nervenkrankheiten, 1898) detected alimentary glycosuria.

As the result of investigations on the sugar assimilation limit in the insane, Raimann comes to the conclusion that inherited psychoses the assimilation limit is lowered: whilst degenerative psychoses show a high assimilation limit.

S. R. KLEIN, M.D.

The Medicinal Treatment of Diabetes Mellitus.—F. Forchheimer (Am. Jour. of Med. Sciences, Feb., 1911,) remarks that, at present, diabetic coma is looked upon as an acidosis due to the presence of large quantities of oxybutyric and, possibly, diacetic acid in the

blood, the result of which is that first the ordinary alkalies are bound to them for elimination by the urine, and when these are no longer sufficient, ammonia is formed from ultimate metabolic changes of albumin which usually leads only to urea. The ammonia combines with the harmful acids and is found in the urine. Indeed, the amount of ammonia found in the urine may be looked upon as a quantitative estimate of the acidosis. From this it would seem that the solution of this therapeutic problem should be easy; add alkalies to control the acids. As a matter of fact, this is what has been done. Sodium carbonate or bicarbonate have been administered by the mouth, the rectum, and intravenously in large quantities, varying from fifteen to eighty-four grammes in twenty-four hours. And yet, simple as is the ratiocination, this treatment has remained singularly ineffective. He has never seen a patient recover from true diabetic coma when it has been thoroughly established. He has seen diabetics recover from coma due to other causes, as has every one who has seen many diabetics, and this line of demarcation between coma in diabetes, and diabetic coma should be carefully drawn in the reports of cases. Moreover, even when one neutralizes the urine, the coma being developed, the patient does not recover, which shows that eventually this whole process is something more than a simple question of acidity and alkalinity. The urine, being more alkaline, shows that in all probability the blood is also alkaline. But we have no evidence that the tissues are favorably affected by this alkalinity or that the alkalinity is of the proper nature. To overcome this, it might be well to try other ions beside those of sodium when diabetic coma is well developed. But even this seems hopeless when we consider that tissue changes go on which probably are irremediable, because of the time required to remove them. On the other hand, when the first symptoms of coma are recognized, the therapeutic results are fairly good with sodium treatment. The indications for the administration of sodium bicarbonate are the occurrence of large quantities of acetone or ammonia in the urine. This should always be followed by the internal administration of sodium bicarbonate in quantities sufficient to make the urine neutral or slightly alkaline; when the remedy is withdrawn and the previous urinary condition again develops, the indication should again be carried out. In addition, the patient should be put upon the proper diet. For practical purposes, it may be accepted that fats and albumin principally produce acetone bodies and acidosis; therefore these patients should be put upon carbohydrates, irrespective of the degree of glycosuria, as the prevention of the full development of diabetic coma is, for the time being, the paramount indication. Large quantities of oatmeal or potato may be given, but according to Naunyn's experience, which he found true from personal experience, milk in sufficient quantity as an exclusive food seems to be the best that can be done diatetically. He states the fact that in treating diabetics for sugar tolerance great care must be taken not to produce coma. This does occur, and it is not a pleasant experience. There are two ways to avoid it; the first is by taking into consideration the results of urine analysis, the second is to give patients sodium bicarbonate during the testing period, as was first recommended by von Noorden.

The Treatment of Skin Diseases with Solid Carbon Dioxide Snow and Demonstration of the Method.—Dr. E. Pisco (N. Y. Med. Jour., Feb. 4, 1911,) remarks that carbon dioxide snow is not an ordinary cautery, it produces an inflammation, due to the freezing of the tissues; its action and effect can be fully controlled from a superficial crythema to a total destruction of the diseased tissue. The snow is, as a rule, used in more or less smaller areas and only where a scar as final result is wanted, nevus hypertrophied scars, angioma, leucoplacia, keratosis, verruca, rodent ulcer, epithelioma, keloid, chloasma, tattoo marks, powder stains, dermatitis, and, last but not least, lupus erythematosus.

In all these there is obtained the best cosmetic scar with a comparatively small amount of pain and skin destruction. It is the best form of treatment for lupus erythematosus. Anything used heretofore was more or less undesirable for one reason or another, the destruction pertained to the entire skin and not only to the diseased tissue, and the scar would never be controlled; here one gets the best cosmetic results, and furthermore, with a few applications one can prevent a process from spreading. In conclusion the author states that the reliable and inexpensive snow fully takes the place of the high-priced radium, but never the surgeon's knife when glandular involvement is present.

The Treatment of Ulcers by the Use of Scarlet Red.—For some time past there has been a number of favorable reports concerning the use of scarlet red on ulcerative processes, particularly those of the leg, due to varicose veins, syphilis or other conditions. Scarlet red is an aniline dye, and is a disulphonic acid derivative, the dye on the market being the sodium salt of the staining acid. It is made from diazoabenzoldisulphonic acid and beta naphthol. It is a powerful stimulant to epithelial tissue growth. It is used as an ointment in 8 per cent. strength in vaseline, or can be used in combination with boric acid, zinc oxide and balsam of peru ointments in the same proportion. The latter method is the better way of using it, for in this case we obtain an antiseptic action in addition to its stimulative qualities. Given an ulcer of the leg with clean healthy granulations, it should be bathed with boric acid solution and dried before applying the ointment. Should the granulations be unhealthy, hydrogen peroxide is used in addition before the boric acid solution. It is best not to use bichloride of mercury or other strong antiseptic solutions on the wound before treating it with scarlet red. Free use of silver nitrate stick is advisable to keep down exuberant granulations. The skin surrounding the defect should be anointed with some bland ointment up to within 1 cm. of the edge. Since this has been done the irritation complained of in some of the early cases has been to a large extent eliminated. The ointment may be applied over the whole surface of the wound if it be small, or simply to the growing epithelial edge. Whichever method is chosen it is best to apply the ointment on herperated linen to which the granulations will not adhere, or which allows the escape of secretions and thus prevents maceration when applied to the edges, the old linen should be used in

narrow strips covered with a thin layer of the ointment. The old linen is preferable to the rubber protective, as it is less macerating. Another very satisfactory method is to apply a thin coating of the scarlet red ointment to the wound edges with a camel's hair brush, being sure that the edges are dry. Then either cover with strips of linen, or expose to the air. This is especially useful in the partial graft cases, and on small wounds, as the ointment can thus be accurately placed and the amount regulated. The portions of the wound not covered by scarlet red may be dressed as seems best, or may simply be exposed to the air under a cage. A light dressing of sterile gauze secured by a bandage completes the procedure. This dressing should be removed within forty-eight hours, twenty-four hour intervals being preferable, and replaced by some bland ointment, such as zinc or boric ointment. After the same interval has elapsed the scarlet red dressing should be replaced. The importance of careful dressing is to be emphasized, as in some cases severe irritation has followed the improper application of the dressing.

It is well to warn patients that the ointment may stain the dressing red, as they may return much frightened saying that the wound has been bleeding.

Primary Sterility in Women.—Dr. A. J. Rongy (Med. Record, Feb. 18, 1911) concludes from his observations, that sterility was due to inflammatory processes of gonorrhœal origin in fully seventy per cent. of his cases. Dysmenorrhœa was present in eighty-four per cent. of his patients. Sterility was cured in twenty-two patients or 18.3 per cent. If those women whose husbands were sterile are excluded a cure was accomplished in nearly twenty-eight per cent. of the cases. Dysmenorrhœa was cured in fifty-six per cent. and relieved in ten per cent. of the patients. Displacements of the uterus are not great factors in the production of sterility, and seldom does pure mechanical obstruction cause sterility. It is the stenosis of the cervical canal produced by endocervicitis that prevents conception. Sedentary occupation in early adult life is the most important cause for the various flexions of the body and cervix of the uterus. Leucorrhœa was present in ninety-five per cent. of the patients and in twenty per cent. the reaction was highly acid. The small or infantile uterus, unless associated with other conditions pointing to congenital maldevelopment, seldom, if ever, causes sterility. In nearly twelve per cent. of cases of primary sterility one is unable to account for it either in the husband or wife. Seventy per cent. of the husbands of women who suffer from sterility have had gonorrhœa, and in forty per cent. the infection extends to the posterior urethra and neighboring structures and is incurable. T hirty per cent. of men who were infected with gonorrhœa suffer from azoopermia. The best operative results were obtained by the dilation and stem pesary method in cases that had not suffered from severe dysmenorrhœa. The Dudley operation did not cure the seven forms of dysmenorrhœa. Plastic operations on the tubes and ovaries do not give much hope for the cure of primary sterility. The prognosis for the cure of sterility is unfavorable; one must not hold out too much hope for the patient; eighty per cent. of the patients remain uncured. Dysmenorrhœa can be cured in the largest number of cases, but one must be careful in choosing the method of operation. One that accomplishes a cure in one class of patients will not do so in another. The greatest single factor in the production of sterility is gonorrhœa and its complications. A goodly number of cases require medical treatment only and as soon as the cervical discharge is cleared up conception is likely to take place. Pathological lesions in the genital tracts of both husband and wife may in time disappear and therefore one must never give an absolutely unfavorable prognosis unless the husband is suffering from aspermia.

Inebriety.—Dr. De Laney Carter (Med. Record, Feb. 11, 1911) defines inebriety as a form of insanity, in which persons have illusions, delusions, and hallucinations, which so modify their actions as to call attention to themselves of the world at large. Medical and legal authorities in particular look upon them as insane, their loss of self-control being considered to-day as an expression of a diseased process, as a symptom of an actual pathological change, is of such importance that a special thought is given to their consideration and much energy of time and money are expended to afford hospitals for their care, where proper treatment may be applied for their recovery and restoration to society. To-day inebriety is looked upon as a disease, and while there is no organ of the body exempt from alcoholic attack and consequent disorder, the nervous system is particularly affected and the mental processes are so altered that the individual is to all intent and purposes insane; without self-control and therefore equally deserving of the same control, restraint, treatment and consideration that is afforded the insane from causes other than alcoholic. As a moral issue its treatment has only resulted in unsuccessful exploitation; civic consideration has simply fixed a canker on the body politic; magisterial and politic considerations of the question have only added to the already large amount of human misery, disgrace and degradation. What is needed, are places where the unfortunate victims shall be treated for the disease which possesses them, institutions situated in reasonably accessible places so constructed, adapted, arranged, and conducted that every indication of the case shall be met. Commitment for such time as shall be needed to perfect a cure is necessary; a cure means re-establishment of self-respect in a physically healthy body controlled by a mind restored to a full appreciation of its possessor's duty to himself and the world. This is a large order but it can be filled. The condition being a disease the institution is of necessity medical; medical men fully equipped by a knowledge of the subject obtained by large experience should have full charge of all departments. The institution should have within its borders general hospital appliances so that necessary medical means shall be on hand to meet the indications of the case when admitted; as improvement takes place convalescent wards or departments with means adopted to assist in the advancement of the cure; as the patient gets in condition means to set him at work at physical labor shall be provided. To this end departments of various trades, in-door and out, plenty of room for gardening and farming, in fact, anything and everything should be furnished for the accomplishment of the object. The author concludes by appealing for an unwearied and persistent, constant and unwavering forcing upon the universal attention the necessity for the accomplishment of our main object, which is the eradication of the use of alcohol as a beverage, keeping persistently at it until finally the idea

percoluates into the inner consciousness of the body politic and the goal is reached.

The Relation of the Doctor to the Church.—Dr. Charles E. Nammack (N. Y. Med. Jour., Feb. 25, 1911) remarks that it has been asserted that our professional studies have a tendency to make us materialistic and atheistic to the last degree. It has also been said that the medical and clerical professions have drifted into a state of antagonism.

For some years, the assumption has been held that conflict really exists between science and religion, notwithstanding that the object of each is the establishment of truth, and that truth cannot conflict with truth. Science consists in the study of phenomena and of their mutual relations of the laws that govern them, and of the theories that explain them. It shows us a self-contained and self-sufficient universe, not in touch with anything beyond or above itself. Religion, on the other hand, requires us constantly and consciously to be in touch with a power, a mind, a being or beings entirely beyond our scientific knowledge. Science demands the proof of every assertion in terms of physical, chemical, or mathematical demonstration. It ignores everything not capable of such demonstration, and when the results of physical study or of historical research have been negative, it goes back to infidelity. Yet no evidence has ever been discovered to prove that we live in an atheistic universe. Instead, when science has attacked the cosmic problem—or the question of the origin of changes in the material universe—it has only proved that there are natural laws in force. It confesses ignorance of the initial state upon which these laws have acted, or else denies the power of the Almighty to inaugurate this state. When science seeks to explain the biological problem—or the origin and development of life—it shows clearly but two things: That life has not always existed on the globe, and that it did not appear until the environment was ready for it. Science is absolutely silent regarding the process of life's beginning, although certain self-sufficient writers have been busy with their imaginations. In taking up the anthropological problem—or the study of the origin, nature, history, and destiny of man—science is totally incompetent to tell us how the earliest man came to be, why man exists at all, whence he came, and whither he goes.

Religion, on the other hand, contemplates a universe which is dependent for its origin and maintenance upon the power and good will of a being or beings of which science denies any knowledge. Religion rests its position upon the tripod of reason, revelation, and faith. During the past forty years, the best thinkers have come to admit the essential unity men's dual nature, and to regard body and soul together as one and indivisible, and, while ignoring no fact of biology, chemistry, physics, or sociology, to look through and beyond these sciences to the eternal and spiritual in man. Evolution is the one great law controlling all living things. He who reads the lessons of biology aright will see in evolution, not a fortuitious combination of atoms developing into the survival of the fittest, but the gradual unfolding of the great natural law of an allwise creator. The one striking fact deducible from the scientific materialism and criticism of the last half century is the admission of the spiritual side of man's nature. The physician who does not accept this admission is like a bird with one wing. He who disregards the efficacy of faith as a therapeutic power will meet with scant success in treatment, because faith stimulates and harmonizes those actions of the sympathetic nervous system upon which the involuntary physical processes of life depend. But faith must have an object worthy of man's ethical dignity and one fitted to draw forth all his spiritual and moral energies. That object can be found alone in God. The employment of faith and prayer as aids in the cure of the sick and suffering has been widely heralded recently as a new thing, although the church has taught their value since her foundation.

The author thinks that physicians too have a divine call. People expect from him sympathy with their sorrows, hope for their despair, charity for their faults, and gentleness with their sufferings. The doctor cannot dispense these unless they are already formed in his own character, and his own character must be founded upon the teachings of Him who came upon earth to cheer, to console, to uplift, and to suffer.

Upon Future Experience with Wassermann's Test for Syphilitic Infection. — After mercury, the early disappearance of the reaction suggests the query whether the disappearance of the reaction indicates the stamping out of the disease, for it may be that reinfection is possible, or that the converse may be true: that the patient might still transmit the disease. Experiments would be very difficult, indeed not feasible, for human material would be wanting. In the use of such remedies as Ehrlich's, we may ask to what extent the subsequent administration of mercury or iodid would be advised. In view of the disappearance of the Wasserman following mercury, and the fact that the Wasserman does not at once disappear on reception of "606," the point is raised as to adjuvant treatment.

In syphilis, the glandular involvement suggests nodes of irritation. Mercury, not alone upon the salivary glands, but upon the pancreas, exerts a direct exciting influence. Arsenic, which we are told is a constituent of the "arseno-benzol" formula, has a direct effect upon fat-metabolism. The sclerosis resulting upon syphilitic ravages may be due to the precipitation of fat in the parenchymata and a fibrous resolution. How arsenic can effect a counter-irritation is known, probably, to the mind of Ehrlich. It would be interesting to know from him his idea of the *modus vivandi* of the luetic process, and its obliteration. This would form a capital section in cellular pathology.

The Problem of Housing.—The problem of well housing young mechanics, apprentices, and those just married, resolves itself to one of relatively cheap ground upon which a very cheap house, two or three rooms only, could be built—a house which could be rented for from six to eight dollars a month, allowing a margin for commutation. In the event of rooms in the city being taken, a very poor accommodation would be the only possible result of the expenditure of such sums. On the other hand, in rural districts, some real return for such amounts can be made, and the problem of "getting ahead" better solved. Rooms could be added, one by one, to the simple two or three-room beginning. The city will become impossible in comparison, for concentration will demand all of the available ground in the city for offices and centers.

MISCELLANY

Strychnin Salts.—Many clinicians favor the nitrate rather than the sulfate. Strychnin arsenate is a valuable hematinic.

Brucine. — Offers an excellent tonic in cases of psychasthenia. It acts well in those of lymphatic temperament who are unpleasantly affected by the strychnin salts.

Bloodstain.—A most useful stain for blood is that described by T. W. Hastings. It is his modification of the Nocht-jenner method, and results in a clear differentiation of basic and acid elements.

Milk-Sugar. — This excellent substance is well-employed as an addition to cow's milk.

By this we render it less constipating, and we increase the nutritive value and caloric production.

Cots for Sick Prisoners have been ordered by the Metropolitan Commission of Police to be used in every station pending the removal of a sick or disabled prisoner or other person to prison, to hospital or to the home.

The Different Sorts of Cell-Metabolism.—A sharp line separates the proteid metabolism, as parenchymatous, from sugar metabolism, as altruistic. *Idiocentric nutrition* should be the term for cell nutrition, and *Allocentric nutrition* the term for metabolism of work done affecting the organic whole.

Raisins.—These are almost a specific for constipation, if eaten with meals and at bedtime, when the constipation is due to some of the commoner causes. The grape-cure for gall-stone is based upon similar therapeutic principles.

Raisins are easily secured, and with prunes, add greatly to our dietary resources.

Chocolate. — Pure chocolate proves a ready food. It is said of Weston, the famous transcontinental pedestrian, that chocolate was his frequent lunch and carried him along with remarkable power.

Hot chocolate is not so invigorating as cold drinks of it, or chocolate in stick form.

Cold tea has been utilized by mountain climbers to increase endurance.

The Public Water Cup is to be avoided as if it were poison, observed Dr. J. V. V. Manning in a recent address on infantile paralysis. This disease, it would seem, was suffered by Mephiboshet, who (the reader may not recall) was the son of Jonathan, the son of Saul. When nine years of age this son of Jonathan fell and became lame; it was, however, really a case of anterior myelitis.

Physicians as Littérateurs.—To the names of Paracelsus and Galen, and Oliver Wendell Holmes, we may add that of W. Gilman Thompson, whose prose and poetry in the Century are interesting and indicate much of the possible to a busy New York medical man.

What would Dr. Thompson have done in literature if he had lived in some less dynamic era?

Epidemic Poliomyelitis is considered by W. S. Bryant (N. Y. Med. Jour., Dec. 17, 1910,) an infection, the virus entering the system by way of the nasopharynx. The disease proper, in contradistinction to the sequelæ, is amenable to local pharyngeal treatment. Prophylaxis is attained by nasopharyngeal hygiene; during epidemics all cases of nasopharyngitis should be regarded with suspicion and should receive prompt treatment.

Oedema of the Glottis, possibly caused by a scratch made by a ship's barber, recently resulted in death after dreadful suffering. Ten days before the fatal issue, while crossing the Atlantic, the sufferer returned to his cabin after having his beard trimmed, when his wife called his attention to a little blood on his collar. That night his throat began to swell, and next day he submitted himself to the care of the ship's physician. On reaching New York a throat specialist was summoned; but death came from asphyxia a few minutes afterward.

The Relations of Tumor to Muscle and Nerve.—While epithelium and connective tissue are frequently the seat of neoplasm, neither the muscle nor nerve ever increases in essential units. This interesting fact should have an important bearing upon the pathogenesis of cancer.

Indeed the singular fact that cancer is epithelial, entirely, should have some absolute value in discovering the cause of carcinomatous change.

Teratoma cannot be described as neoplasm. The nerve and muscle elements of tumor are never neoplastic.

Vaccination Against Typhoid.—Dr. H. Vincent, Professor at the School of Military Hygiene at Val-de-Grâce, has prepared a vaccine against typhoid fever which he describes as easily obtainable, perfectly limpid and absolutely inoffensive; when injected beneath the skin of thirteen adult subjects it was well tolerated and it caused but slight pain at the site of the injection. There was no fever; the blood serum of these subjects so vaccinated showed energetic bactericidal properties.

The Basis of Physiology.—A curious fact remains that Kant has shown us space and time are not real in and for themselves. Yet in that they are only modes of thought, how can they condition the chemical elements which are the basis of protoplasm and its activities?

So that in spite of our knowledge that space and time are matters of mental activities, we predicate extension and draw chemical diagrams, which also are spatial, carrying us away from the true dynamometric conception of existence.

Facial Palsy with Herpes. — The studies of J. Ramsay Hunt have shown interesting relations between the distribution of pain and trophic nerves in Herpes Zoster Otica, as he terms this condition.

It is interesting to study the incidence of sore throat, pharingeal rash and herpes upon the surface of the skin. Hunt says that a study of the herpetic distribution affords a clue to the nerve origins. What inflammatory processes of the geniculate ganglion may cause, we ask, and Hunt replies with a series of cases to show a herpetic (or spinal-root like) development of the nervous syndrome.

Clinicians may observe with increasing frequency the pharyngeal rash, as well as the occurrence of anesthetic or hypersthetic areas upon the tragus, pinna, and post-auricular distribution. Such symptoms, in Bell's Palsy, are evanescent and early, unless the herpes follows.

THE IRRIGATION TREATMENT IN SEVERE PUERPERAL SEPSIS.

BY HENRY WEIL, M.D., NEW YORK CITY.

A CORRECT diagnosis is the first requisite of intelligent treatment and this, of course, applies to puerperal sepsis. When confronted with a rise in temperature following labor or abortion, we suspect a beginning sepsis. Eliminating remote causes such as typhoid, pneumonia, malaria, etc., we finally face differentiation between Sapræmia and true Sepsis.

Sapræmia is the implantation of saphrocytes within the uterus and the absorption of their poisons, whereas true sepsis is the implantation of pyogenic bacteria within the uterus and its attendant results. Both conditions cause fever, chills, rapid pulse, and foul lochia, and in the early stage, both produce symptoms of equal severity. The examination of the lochia is of uncertain value (Bumm) for the character, quantity or odor do not aid us.

Jellett says: "The local symptoms of acute septic endometritis are not very clearly distinguished from those of putrid infection. The majority of cases are mixed, saphrophytic and septic." In view of this last statement a differentiation would seem to be well-nigh impossible. Yet, according to many writers, it is of the utmost importance.

Montgomery says: "In the face of febrile disturbances of the puerperal state the first consideration must be the determination that the condition is due to septic infection." — "The mere fact that a woman has febrile symptoms associated with the puerperium should not lead to a diagnosis of sepsis."—"The condition of the patient must be carefully investigated by inspection and palpitation of the abdomen and pelvis. The absence of local manifestations should demand a microscopical investigation of the blood, for septic processes are associated with a leucocytosis and the septic organisms may be found in the blood."

But in the beginning there may be no leucocytosis, and the absence of bacteria in the blood certainly does not exclude local sepsis. Nor does microscopic examination of the lochia aid us, for according to Jellett and others, the infection may be mixed, and Vineberg states that the presence of pathogenic bacteria in the lochia does not warrant a diagnosis of septic endometritis. Montgomery says: "The chief danger of this condition, known as sapræmia, is that through it an excellent culture is afforded for the development of septic germs which may be present." Leo concludes that the presence of "ordinary streptococci" does not necessarily imply an important genital infection. The diagnostic difficulties are such as to have tempted Potocki and Lacasses to draw conclusions from the diminution or absence of the eosinophile element of the blood. Commenting on which, Sinclair says: "Surely no editorial remarks could rise or descend to language fit to characterize the levity of such teaching; such hastily formed and prematurely published conclusions from dimly perceived phenomena."

Thus the early differentiation between the saprophytic and the septic infections appears well-nigh impossible. As the disease progresses the diagnosis clears itself, for the saprophytic infection soon subsides, but the weakness in waiting lies in the fact that in the meantime many of the milder infections become of the severe type. Again, from the point of view of treatments, early diagnosis is important and delay fatal, since there is unanimous concurrence as to the desirability of removing the uterine contents in sapræmic cases, the only difference of opinion being as to how this is best accomplished, by irrigation, finger, or curette. And after all it makes little difference so long as *all* of the uterine contents are removed. On the other hand, there are numerous writers among whom may be mentioned Montgomery, Sitsinsky, Pederson, Polak, Vineberg and Webster, who contend that intra-uterine interference in real septic infection is both futile and dangerous. But if curettage or manual exploration of the uterine cavity is indicated in saphremia but contraindicated in true sepsis and differentiation is impossible, how are we to treat our cases? On this point Sinclair says: "When symptoms indicating infection set in, action must be prompt and unhesitating. The distinction between puerperal sapræmia and septicæmia must be abandoned, and as a corrollary we must abandon the weakness in action and procrastination depending upon the distinction."

It here seems advisable to take up that leucocytic congestion, the so-called "Protecting wall of Metchnikoff;" the importance of this layer lies in its influence upon the treatment advised by numerous writers and teachers. It is in no sense a specialized function favoring the uterus alone, but merely the local manifestation of Nature's reaction to foreign invasion of the body and its effort to localize or cast it off. Every inflammatory lesion in the body possesses that same protective layer, even to the smallest pimple. Nor is this layer of parchment-like thinness readily perforated; on the contrary specimens under microscope show a layer of comparative depth particularly filling up arteries, veins and lymphatics. This layer is obviously impotent against absorption of toxins since one sees systemic disturbances from the beginning even in mild sapræmic cases and its value must necessarily cease to a great extent once it is breached. Bearing these facts in mind it will be of interest to note the objections to curettage that are urged by numerous writers.

Polak, in a very recent article read before the American Gynæcological Society at Washington, D. C., May, 1910, says: "That any intra-pelvic or intra-uterine manipulation made during the acute stage of a puerperal sepsis always (note always) breaks down and disturbs Nature's protective barrier and permits dissemination of the infection through freshly abraded or penetrated surfaces."

It might be of interest to know what proof the author has of this fact. Allowing for the sake of argument that the above statement can be substantiated, let me quote further from the same paper. "In order to make a differential diagnosis it is our custom on admission to the hospital to subject each patient to the following examination:—The bladder is emptied and a careful pelvic examination is made in order to determine the condition of the cervix."—"This examination is performed under strictest asepsis and the intra-uterine exploration made with the glover hand." These statements force one to the conclusion that Polak does not take this "granulation wall" or its breach very seriously, all statements to the contrary notwithstanding. Vineberg says curetting is strongly contra-indicated in streptococcus endometritis following labor, but gives no facts to confirm this statement. Evidently the diagnosis of streptococcus endometritis

is a difficult matter for this writer states: "It would carry us too far afield to enter ino a lengthy discussion of the diagnosis of this disease." This much we may safely assert. The presence of streptococci in the lochia does not warrant a diagnosis of sterptococcic endometritis or that we are dealing with a serious infection."

That Vineberg is not wholly opposed to the curette is evident from the following. Speaking of "Putrid Endometritis" the writer says: "This group includes the cases of putrid decomposition of myomatous growths in the uterus or of placental or decidual residue that cannot be removed by the curette. "Hysterectomy in these cases is attended with brilliant results provided the operation is resorted to while the process is still limited to the uterus." On this plan one might suggest amputation of a foot as a cure for ingrown toenail. Hirst does not consider infected adherent placenta an indication for hysterectomy, and with "occasional exceptions" the same applies to sloughingmyomata. However, the point I wish to emphasize is the inconsistency of Vineberg's position as to the use of the curette in puerperal sepsis.

Noble is evidently opposed to the sharp curette and is a half-hearted believer in the "protecting layer of white blood cells," for he states: "Any intra-uterine manipulation may do much harm by breaking down the protecting layers of white blood cells which have formed beneath the endometrium and open up new channels of invasion." In view of Polak's statement that intra-uterine manipulation *always* breaks down and destroys Nature's barrier, Noble's statement, "may do much harm by breaking down the protective layer" deserves comment, for on the one hand, it displays absolute faith in this protecting wall, while on the other hand there is a suggestion of doubt. Noble further states that it is extremely hard to say in some cases whether there is some necrotic material within the uterus or not, and recommends the finger, curetting forceps or dull curette for its removal. It will be noticed that Noble does not hesitate to perforate or destroy this "protecting layer of white cells." Sitinsky puts much faith in the "granulation wall" and is opposed to the curette. His treatment consists in flushing the uterine cavity successively with bichloride solution, salt solution, and 90% ethyl alcohol, and finally packs the uterine cavity with gauze. Now obviously this repeated irrigation is for the purpose of detaching adherent placenta and membranes for he recommends digital exploration where placenta or membranes remain. Sitinsky's approval of the finger, with opposition to the curette together with his faith in the "granulation wall" is significant in view of Polak's and Noble's statements concerning the effect of intra-uterine manipulation upon this "protecting wall."

One must from the above necessarily conclude that the theory of protection afforded by the Metchnikoff "granulation wall" and the use of intra-uterine manipulation of any sort are inconsistent and faith in one implies doubt of the value of the other. The one purely theoretical, the other highly practical. The one doubted by many, the other conceded by all. For we all agree that in puerperal sepsis the early removal of all retained tissues is highly desirable and distinctly indicated. The only controversy in the connection relates to the relative value of the finger, the dull curette and the sharp curette. Hirst, who favors the dull curette, states: "The reason that instrumental exploration and evacuation of the puerperal uterus has fallen into disrepute is that the average physician has carried it out like curettement of the non-puerperal uterus, a procedure necessarily often followed by fatal general infection or even by perforation of the uterus." Concerning the relative values and dangers of sharp and dull curette, Sinclair says: "With the sharp curette you may do harm, you may even perforate the uterus, but with the blunt curette you must do harm. No curette is sharp in the sense of a cutting instrument. It is meant to gently scrape. A blunt curette is either a useless instrument, or it is more harmful than the sharp instrument from the objector's point of view. It does all the same stirring up by manipulation and it requires more force and more manoeuvring to do an equal amount of clearing away of retained products of conception or of infectious decidua."

On the virtue of the finger as compared to the curette, Sinclair states: "But in the large non-contracted uterus of early and severe puerperal sepsis you cannot reach the whole uterine cavity with the fingers, or if you use sufficient force, you cause the patient great suffering; and the finger does not help you with the most dangerous contents of the uterus, the fungous infected decidua. The finger nail kept purposely long is a very awkward and inefficient sharp curette. With the finger in fact, you do a maximum amount of injury while conferring a minimum benefit."

I favor the sharp curette used at the earliest possible moment. I do this with full knowledge of the numerous accidents and fatalities with which it is credited. In this connection I beg to observe that the operator and not the instrument is almost invariably at fault. The same is to be said about many failures. The mere insertion of a curette into the uterine cavity with more or less unintelligent manipulation does not constitute a curettage; this operation alone if properly carried out will control the infection in a majority of cases, including all of the true sapræmias, most of the septic conditions when operated upon early, and many of the septic infections at a later period. When the curettage fails the subsequent treament becomes of the utmost importance. To consider this subsequent treatment it is necessary to digress for a time.

"Puerperal Fieber ist Wundfieber; Wundfieber ist Wundvergiftung." This observation of Bumm gives us a sound foundation upon which to base argument. In wound poisoning we see two elements: (1) The local inflammatory reaction and (2) poison absorption. These two elements vary to a marked degree in different cases, thus in tonsillitis, carbuncle, orchitis, etc., we see violent inflammatory reaction whereas in tetanus or snake bite one sees comparatively slight inflammatory reaction but marked poison absorption. The relative severity of these two elements depend (1) on the nature of the poison and (2) upon the nature of the tissue or organ involved: i. e., on its power to resist poison invasion and its power to absorb, thus infection of cellular tissues show marked inflammatory reaction but slight systemic disturbances. These facts being established, it is advisable to inquire first into the nature of the poison in puerperal sepsis and, second, into the nature of the post partum uterus particularly as to its absorptive powers.

The nature of "wound poisoning" in the puerperal

uterus has been definitely cleared up. Indirectly by Pasteur and Lister, and directly by Semmelweis, Holmes, Fritsch, Grunewald, Fehlig, Rindfleisch, Recklinghausen, Waldeyer, Orth, Bumm, Doderlein, Williams and many others. It is now established that any of the pus producing bacteria may be responsible for the infection and that two or more varieties of bacteria may be involved at the same time. It also appears that the virulency of the infecting germs show variation within wide limits.

It is here desirable to inquire into the nature of the puerperal uterus, particularly as to its power to resist infection and as to its power to absorb. Undoubtedly, a clean well contracted uterus can, within certain limits, resist germ invasion, otherwise a much larger percentage of post partum infections would occur, for Bumm and Sigwart found streptococci present in the uterus following labor in from 38 to 74 per cent. of their cases. On the other hand, every septic case bears witness of the inability of the puerperal uterus to resist the infection. Observation indicates that when infection takes place it begins in the retained fœtal products or blood clots or if the infection is primarily located in a cervical or perineal tear it gets its first foothold in the uterine cavity by implantation in these retained tissues.

What evidence have we that the post partum uterus has absorbing power? Anatomically, the presence of vast numbers of arteries, veins and lymphatics. Clinically, the presence of systemic symptoms in still localized infections, sapræmia for example. Also, the undoubted cases of mercury and other poisoning resulting from an intra-uterine douche. Williams collected 46 cases of fatal poisoning from intra-uterine irrigation with bichloride solutions. Experimentally, methylene blue inserted within the uterine cavity promptly shows up in the urine. I have proven this repeatedly. Authoritatively, Noble says: "Pyogenic organisms produce not only local but also general lesions. *The latter result from absorption into the general circulation of the toxic products of the infectious organism* or the organism itself. When toxins alone are absorbed the condition is spoken of as toxæmia." "Peritonitis is also one of the gravest forms of puerperal infection although it is neither so common nor fatal as the forms in which toxæmia or bacteria play the largest part." Again, "It is extremely hard to say in some cases whether or not some necrotic material remains within the uterus in which infectious organisms are swarming and *from which toxins are being absorbed.*" In this connection Sinclair states the wound or absorbing surface within the uterus only differs from these (cervix and perineal injuries) because of its anatomical relations which make it the more dangerous and therefore it should receive our chief attention and if possible be more thoroughly cleaned."

Now since it appears that the uterus can and does absorb, it is evident that this absorption necessarily takes place largely from its contents, the lochia, into which it is now desirable to inquire. Normally the lochia consists in a great part of blood. When examined under microscope, is found to be made up of red and white blood corpuscles, epithelial cells, and shreds of degenerated decidual tissue. It is contained in a large cavity, the uterus which drains itself only by overflowing, the patient being, of course, in bed, the uterine cavity being continually partially filled with this mixture. Now this mixture is an ideal culture media for bacteria, and the temperature of the organ and lochia is also ideal. Thus we have here a pernicious combination (1) and ideal media (the lochia) for germ growth and toxin elaboration (2) contained in a cavity whose temperature is ideal and this (3) in a cavity possessing unusual absorptive powers. When curettage fails to control a puerperal sepsis and the disease progresses, this same pernicious combination, ideal culture media and ideal temperature contained in an organ capable of absorbing, is still present, for while the operation may for the time clean the uterus of discharges, they are soon reformed. The operation will have no important effect upon the temperature nor the absorbing powers of the uterus, but under these circumstances this additional fact is to be noted. The uterine contents are swarming with pathogenic bacteria and their toxins, for the curettage cannot remove the infection.

If absorption plays a part in puerperal sepsis, then we have here a basis for rational and efficient treatment. According to Noble there are two types of puerperal disease, one in which the toxæmia and bacteria play the leading part, and the other in which the inflammatory lesions predominate. Both elements (inflammatory and absorptive) are present in every case, but if in any case the poison be particularly virulent and absorption great the patient might readily die before the inflammatory symptoms manifest themselves. Or if the toxins lacked virulency, or absorption was slight, the case might readily go on to abscess formation. (Inflammatory or lymphatic type.) If this is true the toxæmic form must predominate in cases in which the absorbing power of the uterus is greatest and inversely the inflammatory form in cases wherein absorption is least. Clinically this is exactly what occurs, for in sepsis following early abortion, where the uterine surface is slight, the inflammatory form is almost invariable, while in sepsis following late miscarriage or labor at term where the absorbing surface is extensive, the toxæmic form is by far the most frequent and incidentally the most fatal.

Curettage in puerperal sepsis will, if successful, show results within 24 hours, and if within that period no improvement is manifest, the patient is entitled to the benefit of the doubt, and the case must be considered one of unusual severity with a doubtful prognosis. In this unfortunate position, what does medical science offer? Medically: Drugs given empirically, such as mercury, opium, alcohol, etc. Careful feeding to conserve the patient's strength. Heart stimulants for weak circulation. Intravenous and rectal injections to combat shock and promote elimination, and serum therapy to counteract the toxæmia. Surgically: Hysterectomy, ligation of thrombosed veins, and Pryor's operation. Of the entire list of remedies that have from time to time been recommended for this condition, and I have mentioned but few of them, there is but one (hysterectomy) directed against that hot-bed of germ production and toxin elaboration, the septic uterus and its contents. We can dismiss all the purely medical measures as being devoid of any direct influence upon either the germ growth or toxing absorption from within the uterus. Likewise all intra-venous, subcutaneous or rectal injections, and while I have no desire to depreciate the

value of these injections under other conditions, the fact of the matter is, they are also devoid of any direct influence upon either germ growth or toxin absorption from the uterus. Serum treatment has not shown itself to be of any value and the same may be said of nuclein, Crede ointment and other silver preparations.

Pryor's operation, which has at least the virtue of a local effort, aims principally at the inflammatory features of the disease with a view of creating an open abscess of selection, for Pryor opens the cul de sac early and packs the entire pelvis with gauze impregnated with iodoform, and while he extols the virtues of the iodine as a preventative or neutralizer of the toxins, clinical experience does not bear this out. This operation is not without value in sepsis of early abortion where the inflammatory elements predominates and diffuse peritonitis threatens. Theoretically, that is, as a means of curing puerperal sepsis hysterectomy if done early enough would be ideal, but it is hard on the woman. According to Hirst, when hysterectomy is indicated it is too late, which means that it is never indicated and Boldt states that all surgery is in vain in the presence of bacteremia. According to Mouchotte there is no positive indication for hysterectomy since bacteriological examinations of blood and lochia furnish no positive prognosis. So it appears that hysterectomy is rarely indicated and as a matter of fact is generally abandoned as a means of curing these cases.

The ligation of thrombosed veins suggested itself to Freund in 1897, and was carried out twice with death in both cases. Associated with this operation are Trendelenberg, Supple, Leopold, Bumm, Lenhartz, Vineberg and others, all of whom advocate the operation under more or less restricted conditions. Opitz, after a careful study of the subject and a review of cases, concludes that the operation at best is rarely successful. Hirst says laparotomy is contra-indicated in pelvic thrombosis, and Friedlander, in a study of 6,000 cases, found 23 cases of thrombosis with no deaths which would seem to show the condition of little prognosis importance. On the other hand Vineberg reports seven cases in which he deemed it necessary to ligate or excise one or more of the pelvic veins with three deaths. Personally I have had no experience with the operation and am not in position to comment upon its value or indications. I am inclined to agree with Taylor and consider venous thrombosis a "conservative lesion," that is one of Nature's defensive processes, but independent of this, it appears to me that in order for the operation to be successful, it would be necessary to ligate all of the veins leading from the infected area. Since the excision of some of the infected venous thrombi would not prevent the same thing from recurring in the others. Ligation of all the veins is of course impractical.

Thus it appears that when curettage fails, medical science offers no reliable or direct means of combatting the puerperal infection. Permit me to suggest one:

THE IRRIGATION TREATMENT.

This treatment consists simply of frequent or continuous intra-uterine irrigations, not for the purpose of removing infected tissues, not as a germicide, but only to create active, positive and continuous drainage. Bearing in mind the enormous absorbing surface of the relaxed and infected puerperal uterus, the extremely toxic nature of the lochia, and the important part absorption plays in this disease. The object of this treatment is to keep the uterine cavity continually free from this poisonous lochia, thus destroying and removing that hot-bed of germ-culture and toxin formation. And, for the purpose of checking further absorption from that source. This treatment is not suggested as a routine procedure for all cases of puerperal fever, nor is it intended to supplant curettage. It is recommended only after curettage fails.

The treatment requires no special apparatus nor does it demand any extraordinary skill, two facts which should recommend it to the general practitioner for use in the homes of his patients. It is given as follows: The patient is placed on a table in the dorsal position, the cervix exposed with the aid of a perineal retractor and two rubber tubes of fairly large calibre are inserted into the uterine cavity, one well up toward the fundus, the other merely beyond the internal os. These tubes should be long enough to extend somewhat beyond the vulva. They are held in place by a light vaginal pack. No anæsthesia is required for this procedure for it should be practically painless. The patient is now returned to bed. To irrigate it is merely necessary to couple a douche can to the long tube, the other acting as a return flow. A Kelly pad or douche pan collects the return flow. For continuous irrigation, it is only necessary to keep the douche can filled and this can readily be intrusted to a reliable nurse. The rate of flow can readily be regulated by altering the height of the douche can. The irrigations can be given as often as the case seems to require and it is recommended to begin with continuous or very frequent ones. Once the patient shows improvement the frequency can be cautiously reduced. The nature of the irrigation solution is unimportant and perhaps sterile salt solution is as good as any. I see no objection to the use of mild antiseptic solutions, but strong ones are to be avoided. It is indicated at a time when we are desperately in need of some form of treatment that offers hope, when we are practically at the end of our resources and when the prognosis is positively bad.

Objectors will among other things urge that it is impractical, since it involves continuous work both day and night. But it must be remembered that it is a heroic procedure used in desperate cases only, and that a woman's life is at stake under which circumstances no effort should be too great. Or it may be urged that the continual presence of the physician is necessary; but this is not true for the irrigations may be safely intrusted to an intelligent nurse. Or it may be urged that the bacteria by this time have penetrated deeply into the tissues, or even into the blood stream and are consequently far beyond the reach of irrigations. Replying to this objection, I desire to point out that the bacteria which lie in the tissues and vessels are in constant combat with the leucocytes and there is ample evidence that unhandicapped, the leucocytes are fully able to cope with them, for it is universally conceded that the presence of pathogenic bacteria in the blood has no perceptible influence upon the prognosis, and that pelvic suppuration which takes place in almost all cases of true sepsis except the rapidly fatal types bears ample evidence of the ability of the leucocytes to contend with the germs that find their way into the lymphatics. On account of this

same objection it might almost be contended that the stomach tube was useless in narcotic poisoning because some absorption had already taken place.

It is not necessary for this treatment to check all absorption to make it of value, for if it is only partly successful it then accomplishes more than any other procedure we know of. If it ameliorates the symptoms to any perceptible degree it is much to be desired and is, as my clinical experience leads me to believe, it checks absorption to a degree sufficient to enable the patient to tide over the critical period and to enable the leucocytes to limit further germ invasion, it is then of inestimable value. Out of 14 cases treated by me by this method, all but one finally developed pelvic abscess. This localized pus formation is now recognized as a defensive process of Nature or, as Kelly expresses it, "An effort of Nature to rid herself of an unwelcome guest." Bearing in mind that each of these 14 patients were in a desperate state, it would appear that the irrigations did check absorption of toxins sufficiently and thus permitted the patient to live long enough to allow the leucocytes to circumscribe and localize the invading germs.

Finally, irrigations; single, occasional, frequent or continuous, have from the time of Reculin in 1757 been used and advocated in some form or other. Lige, Grunewald, Winkle, Schucking, Playfair, Braxton, Hicks, Schroeder, Munde, Lusk, Fritsch and numerous others have all expressed themselves upon the subject.

The earlier writers employed intra-uterine irrigation much as we employ the curette, that is for the purpose of removing retained placental and decidual tissue. During the antiseptic days of surgery they were employed for their germicidal value. At the present time it is common to note the employment of a single irrigation following curettage, or the single daily irrigation during the course of the disease. But I have been unable to locate any writer who employs intra-uterine irrigations similar to the method advocated in this paper, or with a similar object, i. e., *Only after curettage fails, and then only as a means of creating active positive and continuous drainage of the uterine cavity so as to rid that organ (whose absorptive powers are second only to the stomach) of that cesspool of pathogenic bacteria and deadly toxins,* (whose presence within the uterus constitutes the chief menace to the patient) *and by this means to check further absorption of toxins and to deprive the infecting process of its unlimited source of germ supply.*

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Lumbar Injection of drugs, especially Salvarsan.—S. J. Meltzer (Med. Rec., March 25, 1911) suggests, in a general way, that lumbar injections should be made, especially into the sacrospinal muscle, which presents anatomically an exceptionally well isolated, large, compact mass, densely packed with fine muscle bundles. Meltzer found the absorption from this muscle to be superior to that from the gluteal muscles, and vastly superior to that from the subcutaneous tissue. Clinically, he found, in a limited number of cases of syphilis, that salvarsan injected into this muscle exerts a fairly rapid, unmistakably beneficial influence on secondary and tertiary luetic manifestations, and on the Wasserman reaction without causing pain and other ill effects deserving serious consideration.

TYPHOID FEVER PROPHYLAXIS.

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THIS is solely an ingestion infection; the typhoid bacillus is disseminated from the excreta of sufferers, from their vomit, from the sputum (rarely), possibly from their perspiration; possibly also the petechial eruption in this disease may contain the bacillus, whence the water in which the patient has been bathed may contain the germ. From such sources it is conveyed thence into the digestive tracts of new victims with food and drink or any other impregnated material that is ingested.

Typhoid, then, is not an air-borne infection, but strictly an ingestion infection; and this fact makes the prophylaxis of typhoid theoretically simple, although the practical application of the principles of prevention in this disease is not simple.

Many typhoid epidemics are due to polluted water; this is in fact the chief medium of typhoid infection. The bacilli live in it for varying lengths of time, according as the water is free from inimical bacteria; flowing or still; exposed to light and to aeration. Typhoid bacilli have the briefest existence in flowing sewage. In streams, wells and reservoirs of drinking water they live from two to three months. Water becomes infected from drains carrying living bacilli, or from the soil—in the latter case through either surface or underground drainage. Outbreaks in the country often follow violent rainstorms in the late autumn, by swelling channels, the bacilli being thus carried to wells and streams. How long they may live in the soil is not known—but very likely, under favorable conditions, from season to season.

It is interesting to note here that streams tend to self purification. Dr. F. G. Ruediger has found that colon and typhoid bacilli disappear much more rapidly from polluted river water during the summer months, than in the winter, when the river is covered with ice and snow. The destruction of these pathogenic germs in the river water in summer is in great measure due to the growth of microscopic plants and saprophytic organisms, which appear to give off harmful, dialyzable substances. Such substances are not developed in the winter, since no growth takes place below 0° C. The sun's direct rays are an important factor; and their effects are entirely lost upon a river that is thickly covered with ice and snow. We may thus explain why some Northern cities, where sewage-polluted river water courses into water-works, are more frequently troubled with typhoid outbreaks in the winter and spring. Analyses show that the pathogenic bacteria from the sewage travel several times as far in the water under the ice before they are destroyed, as they would in an open river during warm weather.

Thus typhoid may be contracted from water contaminated by the excreta of the sick, through the medium of the sewer, the privy, the open cesspool, defective plumbing, badly constructed wells, or washing from the ground on which the infected feces have been thrown. The clothes of a typhoid patient may be washed in a stream; or a convalescent may prematurely bathe in a stream. Or a well or cistern may be contaminated by a person having typhoid bacilli on his

hands, who manipulates the water bucket. Or a person may have been standing in the slops thrown about the house in which a typhoid patient has been ill; and then, by standing on the leaky platform of a well, the filth from his shoes may percolate into the well.

A couple of instances (among a great many) will not be amiss: During the winter of 1885 a man living on the bank of a stream near Plymouth, Pa., which flowed into the town reservoir, came down with typhoid. His excreta were thrown out on the snow; and in the spring the waters from the melting of this snow and of the rains, washed the bacilli into the town's water supply. Typhoid fever suddenly broke out. The population was 8,000: during the heighth of this explosive epidemic from 50 to 200 persons were attacked daily; altogether there were 1,104 cases and 104 deaths; people who drank, not from the reservoir, but from wells, escaped.

And yet the well is oftentimes to blame. A man coming down with typhoid fever in a tavern had his undisinfected excreta thrown on the ground without. Presently the family of the tavern keeper came down with it; and following them one half the population of the neighborhood. Ten deaths were the harvest; and all the houses in which the disease appeared had taken their water from that tavern well.

Yet by no means all epidemics are due to polluted water. The amazingly touch parasite which is the essential cause of typhoid has remained potential in ice several months. It multiplies rapidly in milk—an excellent culture medium. Unclean hands that have come in contact with the discharges of a typhoid patient may contaminate the milk; or it may be drawn into containers (cans, bottles or pails) that have been washed with infected water; or flies may introduce the germs from typhoid discharges; or germ-laden dust may get into the milk. At least 195 epidemics have been traced to milk contaminated on the farm. It is said that in 1908 a single Boston milkman, who worked while suffering with typhoid (a walking case) originated an epidemic of 400 cases.

After milk must be considered also the possibility of infection through the medium of ice cream, buttermilk, butter and cheese. Uncooked food may cause the disease through being washed by infected water. Extensive epidemics have been definitely traced to the eating of shellfish taken from polluted waters. Some people are fond of "fattened" oysters: such may have been fattened near sewer outfalls.

The "typhoid carrier" has of recent years loomed up large as a distributor of the bacillus. There is for example, the cook who never herself had the disease, but who yet, in the customary round of her engagements, infected a number of households—27 patients in five years. In another case virulent typhoid bacilli were found, although the subject had suffered his attack of typhoid forty years previously. We must also fear the typhoid contact, who has become contaminated by his association with, or his kindly ministrations upon typhoid patients.

The house fly is now well-named the typhoid fly; it is evidently one of the chief factors in typhoid transmission. This indiscriminating insect finds equally congenial habitat in filth and in food; it thrives with equal zest in the manure heap, and in such human food as butter and milk. We speak of typhoid as the autumnal disease because (except in epidemics) its highest mortality is attained in the Fall of the year. Many a city man has returned from his August vacation down with typhoid; or has returned from an automobile trip thoroughly incubated with it—and "the tainted well" has been blamed. Wells are certainly from time to time at fault—but not always, by any means. Possibly the germ got its implantation in July, when the fly flourishes most; counting thence a fortnight for the incubation and a month or six weeks for the disease it is quite possible a typhoid death in September has been by reason of infection in "fly-time."

In the prevention of typhoid fever the following measures are essential:

Whenever there is occasion to fear the disease only distilled, or bottled, or boiled water is to be used. Most filters are unreliable—and are thus worse than useless.

It is best to have previously constructed good wells and such as would be impervious to germs that would get into them by bad drainage. Wells must be located on high ground, and away from all pig pens, stables and other out-buildings. There should be no puddles of water near by. Around the mouth of the well a tough clay should be spread, packed thoroughly to form a water-tight layer over the soil, and sloping so as to carry all surface water away from the well. Still better were it to cement the upper part of the wall and lay a circle of cement over the surface. The platform should be wide enough to keep away any surface water.

No one who is sick, or who is attending a typhoid sufferer should work with well-buckets or about a pump. A well covered by a small house and pumped by a windmill is much the safer. Sometimes the authorities find it necessary to fill up wells that have produced disease; the citizen should help health officers in such work for only thus may it be possible to protect a community.

As to milk: Those in whose families there are typhoid sufferers should not be allowed to work in and about dairies. Milk must be kept from contamination with the typhoid bacillus. Typhoid convalescents, or those who have recovered from the disease, or typhoid carriers or attendants upon the sick must not handle milk. Flies must be excluded from dairies. Bottles and cans must be sterilized before use. All bottles and cans, immediately they are filled, must be sealed. Manure heaps must be screened or put into pits; they are the chief breeding places of flies.

For the washing of food that is to be eaten raw (all food must be cooked in times of epidemics), and for the rinsing of household utensils boiled water should be used. Raw shellfish should not be eaten in the months "without the R;" cooking destroys the typhoid bacilli, wherefore cooked oysters are safer than raw. In times of typhoid epidemic we should avoid indigestible food, green fruit and whatever else is liable to set up indigestion or diarrhœa; the system will not then be predisposed to the infection. There should be no bathing at beaches or in rivers or lakes near the opening of a sewer. The ordinary rules of personal and household cleanliness and hygiene must be stringently adhered to when there is typhoid about. The windows and doors of all dwelling houses (especially those of the kitchen and dining room) must be screened in warm weather; else a carelessly managed case of the disease

may endanger a whole community.

With regard to the patient himself:

The sick room should be large, easily ventilated and as far as possible from the kitchen and living and sleeping rooms of the other members of the family. All ornaments, draperies, carpets and whatever else is not absolutely needed in the sick room should be removed before it is appropriated to the patient's use. There should be thorough ventilation day and night, but without draughts; there is no better disinfectant than fresh air. The bed is to be put as near the middle of the room as possible, and protected by a rubber sheet over the mattrass; the bedding and blankets are afterward to be disinfected or, better, destroyed. If possible but one attendant (or one for the day and one at night) to take charge of the patient; no one else, except the physician, should enter the sick room. Household pets are obsolutely excluded. Such flies as are found in it are to be caught and destroyed; they should not be allowed to escape.

The patient should use exclusively his own plates, cups, glasses, knives, forks, spoons, etc.; and these should not be mixed with similar utensils used in the household. They should be washed in the sick room in hot soapsuds, and then mixed in boiling water. Remnants of food should not be taken into the kitchen; the attendant should burn them in the sick room or outside the house. The attendant should wear clothes that can be laundered; all her soiled clothing and all other clothing and bed linen—all material that has in any way come in contact with the patient, should be soaked for an hour in carbolic solution (1-30) before removal from the sick room; and then it is boiled for five minutes in soapsuds before being added to the general wash.

Any articles or surfaces soiled by the patient's discharged must immediately be washed with carbolic solution. The discharges from the bowels and kidneys must be received into a bedpan or vessel containing carbolic acid or corrosive sublimate (1-500) sufficiently to cover them. Solid fecal masses must be broken up in the solution.

The attendant washes her hands and dips them in bichloride (1-2000) every time the patient is handled, especially after removal of the bed pan or the urinal; before eating she most carefully washes her hands, and her face. She is not to eat in the sick room.

When the final disinfection of the sick room and its contents has been ordered by the physician or the health officer, the patient's entire body should be bathed and the hair washed with hot soapsuds. He is then to be dressed in clean clothes and removed from the room. Under no circumstances is it to be occupied, or anything removed from it until the final disinfection has been done.

Cases occurring in the family of a milk dealer had far better go to hospital; otherwise the sale of milk should be stopped until recovery and final disinfection.

Thus much for individual prophylaxis. With regard to communal typhoid prevention, circulars of adequate information are now issued by Municipal and State health authorities. The United States Public Health and Marine Hospital Services at Washington, D. C., has issued two important papers by Dr. L. L. Lumsden on: What the Local Health Officer Can do in the Prevention of Typhoid Fever: and What the Mayor and City Council Can do in the Prevention of Typhoid Fever.

An important case relative to municipal liability for typhoid deaths was recently decided by the Supreme Court of Minnesota against the City of Manketo in that State. This city was adjudged liable for its negligence in its private or corporate capacity in allowing its waterworks system to become polluted, causing the death of the father of the plaintiffs. Poisonous, foul and dangerous substances "and large quantities of filth and sewage, all of which were saturated with the germs of diseases" had been permitted to escape into and saturate the water supply; the water thus became imminently dangerous to life and health so that the plaintiff's intestate, a citizen and resident, used the water, contracted typhoid fever and died in consequence.*

TONSILLITIS.[1]

BY JOHN AULDE, M.D., PHILADELPHIA, PA.

TONSILLITIS in children, as in adults, is a coccus infection, usually the streptococcus, but its contagious character is greatly over-rated. Like many other contagious diseases, tonsillitis will not occur unless the conditions are favorable for the growth and multiplication of the infection. When these conditions are understood, and the proper measures taken for their correction, the treatment of the disease is extremely simple. A study of the usual deviations from normal will suffice to make this point clear and distinct.

In a general way, every case of tonsillitis is traceable to disordered digestion, exposure to cold being the exciting factor. In the incipiency of an attack, therefore, the proper thing to do is to adopt a restricted dietary and try to avoid exposure—in short, to fast and keep warm and comfortable, when the normal nerve stimuli, electric, thermic, mechanic and chemic, will neutralize the toxin (infection). Let this toxin gain entrance to the circulation and there follows reaction or fever—thermic stimulus being called into play. Thermic stimulus generates electricity and electric stimulus develops chemic changes (reactions or stimuli), and if the child is old enough, we also have a psychic effect or stimulus. The severity of an attack, however, is determined by the chemical status of the body fluids and tissues; in other words, by studying the reactions.

An acid salivary reaction is the token—the sign of susceptibility—and its persistence necessarily hinders recovery and prolongs convalescence, because acid saliva is abnormal, positive evidence that there is a disordered condition of the nervous mechanism incident to the indigestion. This is well illustrated in severe cases, where we have to contend with high temperature, restlessness, even delirium, sleeplessness and more or less pain in consequence of the congestion. At first a local manifestation, the vascular character of the tonsil act as a port of entrance. Under normal conditions as to reactions, however, the antiseptic

*The *Jour. A. M. A.*, (Jan. 14, 1911) makes pertinent comments on this case.

[1] Extracts from the Ms. of a proposed book entitled, "The Chemical Problem in Nutrition."

properties of the body fluids would be quite sufficient to neutralize infection as fast as taken up—showing that acid excess with coincident reduction in alkalinity of the blood must be regarded as responsible for systemic invasion.

This is not all; nor does the foregoing description afford a normal perspective of the disease, except in a most superficial manner—like all perspectives. Indigestion, while it leads to acid excess and susceptibility to coccus infection, does even more, through the chemical reactions taking place in the nerve structures, the missing link in respect to treatment. Here, as in every other instance or disorder, acute and chronic, the acidity depletes the lime content, while magnesium takes its place, so that the nerve cells cease to functionate in a normal manner, and thus the tissues lose their resistant properties — an illustration of the chemical changes taking place which give rise to or determine susceptibility.

Summing up the various deviations from normal, disordered digestion leading to acid excess, with exposure to cold, generally the exciting factor, coccus infection through the tonsil, with the coincident chemical transformation in the nerve structures, and the problem of treatment is more than half solved—at least it is simplified in a marked degree, as will be seen from a cursory glance at modern methods, scientific and traditional.

Anodynes—opium and its derivatives—are employed to relieve pain, but they do harm by further obtunding nerve susceptibility, arresting the secretions, while the infection runs riot through the system—and the patient is then convinced of his illness. What effects, immediate and remote, are produced upon the delicate brain structures of infants and children by this scientific (?) misfit must be discovered by the psychologist of the future—it passeth understanding.

Hypnotics are used to promote sleep, oblivious to the fact that the germs work while you sleep, so that the "expectant" plan serves merely to prolong the malady and pave the way for interminable complications.

Antiseptics are of value, for their effect upon the tonsil—not for systemic effect—but to be efficacious, it is necessary to maintain antisepsis throughout the entire nasal as well as the buccal cavity. The best results are attained only through thorough disinfection of the naso-pharyngeal space, and especially the upper portion—an exceptionally favorable nidus for germ proliferation. Antiseptics for the bowels are demanded only in the case of prolonged illness as a result of employing harmful anodynes and useless hypnotics.

Antipyretics, to reduce fever, are of questionable advantage, except as a temporary expedient, because of their depressing effect upon the heart. I have employed with good results the combination of acetanilide with caffeine and nuclein—in consideration of its demonstrable efficiency in promoting the radiation of heat, together with its advantages as an analgesic and freedom from untoward after-effects. It should be understood, however, that antipyretics are not curative—they are merely expedients, and are employed as collateral treatment, for the temperature elevation, the latter being a symptom—not the disease itself.

Sudorifics, to produce free perspiration, along with sialogogues, to stimulate the flow of saliva, are of doubtful utility—on a par with the antiquated and obsolete practice of administering purgatives and emetics for their "revulsive" effects.

Arterial Sedatives, in small doses, may be employed to advantage in the early stage of an attack to relieve active congestion, a mere symptom of the intensity of infection when coupled with the personal susceptibility. With efficient measures to correct abnormal reactions, the demand for symptomatic treatment disappears .

Topical Applications.—Coming now to the traditional methods, included under the head of topical applications, such as swabbing, gargling, the employment of heat, in the form of wet or dry compresses, poultices of mush, flax-seed, hops, etc., together with ham fat, salt bacon, dirty stockings and "rubbing" bottles of every conceivable description and variety, it is incredible that such absurd methods should still prevail amongst an educated and intelligent people.

Studying the disorder from a scientific viewpoint, in the abstract, we have to deal with systemic infection, the nature of which is known. This infection finds entrance through the tonsil, giving rise to the usual symptoms produced by similar toxins. The apparent cause, disordered digestion, coupled with cold and exposure, has long been recognized, but the pre-existent effects, which produce or create the susceptibility, have been overlooked—as a result of failure to observe the status of the reactions. And here is found the pivotal factor, or turning point, which determines susceptibility. In other words, derangement of the physiological equilibrium has so interfered with nerve conduction that the cellular structures imperfectly perform their functions. Just as in other instances of like character, typhoid fever, tuberculosis and pneumonia, we discover that the magnesium infiltration—an effect—is the real cause of the apparent cause of tonsillitis, and thus we have advanced another step in demonstrating the chemical problem in nutrition.

To give this discussion a practical turn, it will be necessary to present evidence in concrete form to confirm the abstract theory—and establish the fundamental basis upon which it rests. This task will be rendered less difficult by submitting a preliminary chart for the purpose of developing the systematic plan of treatment which is universally applicable—although early treatment precludes the necessity for carrying it out in detail and prevents complications, recovery being usually complete within twenty-four hours, with no lingering convalescence.

Treatment of Tonsillitis—Schema.

Direct:	Nuclein—Antidote to coccus infection. Alkaline-saline—To neutralize acid excess. Calcium Salts—To promote magnesium dissociation.
Collateral:	Fever—Arterial sedatives (Gelsemium). Pain—Acetanilide with caffeine. Antisepsis—Local applications. Suppuration—Evacuation (Calcium sulphide to prevent).
General:	Diet and hygiene. Inunctions, massage, baths. Electricity, oxygen enemata.

Direct Treatment.—To antidote coccus infection we have nuclein, given in the form of tablet triturates, small doses at short intervals, or a single large dose

hypodermatically. Fever, pain, restlessness, difficulty in swallowing, all subside in the course of a few hours, while the tendency to suppuration is arrested.

As a rule, but one of the tonsils is involved at first, the other becoming affected usually within twenty-four hours — some times several days elapse — but this is avoided by alkaline-saline medication to neutralize acid excess, indicated by testing the saliva with blue litmus paper.

Susceptibility having been brought about through the acid excess and consecutive deterioration in nerve conduction, it naturally follows that measures should be employed for the special purpose of re-establishing a normal condition in the cellular structures, and especially is this necessary in respect to the nerve cells, in consequence of the lime depletion. By adopting this course, we avoid the "convalescent" period, although with early treatment in the case of robust children as previously outlined, there is rarely a demand for the calcium salts. When we have to contend with debility, susceptibility to colds with evidences of failure in nutrition—so-called "delicate" children—calcium constitutes the most important part of the treatment.

The following case, which came under observation some years ago, supplies an excellent illustration.

A boy, thirteen years of age, was brought for treatment late in the autumn, his parents being anxious to avoid recurrent attacks of tonsillitis, which had seriously interfered with his attendance at school for several winters past.

Physical growth was in advance of mental development; the patient was poorly nourished, appeared to be tired, could not keep up with his class, and at this time, which was early in the session, several studies had been discontinued. The father was much concerned, and as a special favor, requested a "thorough examination." He was told that the history, together with the boy's apearance, was quite sufficient to venture a diagnosis and determine treatment. Indeed, the conditions were typical—intestinal indigestion from unsuitable diet, together with exposure to cold in alternation with a badly ventilated and over-heated schoolroom.

Regulation of the dietary consisted principally in eliminating cereals, while medication was confined almost exclusively to the calcium salts, with the result that there has never been a recurrence of tonsillitis. It should be added also, that the boy took on rapid growth, became robust in appearance and what is even more to the point, found no difficulty in maintaining his standing in school.

There is an impression prevails—with physicians—that tonsillitis in childhood and adolescence foreshadows rheumatism in later life, and they point with pride (?) to the records of their consecutive appearance as proof, but this is an extremely superficial view and the deduction is unwarranted. Correction of the acid excess in childhood coupled with attention to the disordered digestion, and the child will "outgrow" the diathesis. In the case of adults also, identical management enables them to outlive it, so that in the final analysis, immunity from tonsillitis—as well as from rheumatism—relates to chemistry rather than to physiology. Hence, the utter fallacy of traditional methods, grouped under the head of "topical applications," there being neither reason nor excuse for their multiplicity .

Colateral Treatment.—It will now be in order to discuss collateral or symptomatic treatment—rarely demanded unless the case is well advanced, or the patient a confirmed sufferer from the acid diathesis.

Fever, Congestion and Restlessness or delirium are promptly relieved by the internal administration of gelsemium, an arterial sedative, in small doses, at short intervals. By relaxing arterial tension, a more equable distribution of the blood is secured—fever is allayed, congestion relieved and restlessness overcome, so that the most formidable symptoms subside in the course of a few hours.

Pain, Headache, or Nausea and Vomiting readily yield to the analgesic effects of acetanilide with caffeine, a small dose being given at hourly intervals and followed by a moderate quantity of hot water—to insure immediate solution and prompt distribution through the medium of circulation. It is also an efficient antiseptic. This combination I have used for upwards of twenty years and invariably with the most happy effects.

Local Antiseptics are not without value, although not imperatively demanded in mild cases, except as a precautionary measure—and right here should be emphasized the danger of infection from kissing. All local applications should be bland and free from irritation, and with the exception of hydrogen dioxide as a throat spray, no watery solutions should be employed. By far the most important local application consists in thorough disinfection of the nasal cavity, by means of a non-irritant antiseptic held in solution by oil. Caustics and the like should find no place in the treatment of tonsillitis—unless it is desired to aggravate the malady, prolong the illness and pave the way for complications.

Suppuration demands immediate evacuation, followed by calcium sulphide—to arrest this tendency. When pus-formation is imminent, congestion is relieved by arterial sedatives conjointly with calcium sulphide—the excessive acidity being neutralized by alkaline-saline — while external applications, such as poultices, insure it.

General Treatment is outlined in the tabulation, diet and hygiene being of prime importance. Usually, in tonsillitis, the patient develops a craving for some particular food substance, but inability to swallow without pain becomes a constant source of irritation. Careful study of this problem shows that the "craving" arises from the highly acid condition of the system—a chemical deviation coincident with, or consecutive to, depletion of the lime content of the nuclear proteid. This symptom is promptly relieved by alkaline-saline medication to neutralize acidity—later, the calcium salts should be employed to correct the chemical deviation.

On the whole, therefore, we shall more quickly arrest the disorder and avoid a lingering convalescence by fasting, or by adopting a restricted dietary until the acute symptoms have subsided.

Hygienic Treatment requires no elaborate discussion. It is desirable that the patient be isolated and his room well ventilated, he temperature being maintained at about 68° F.

Diabetes Mellitus requires arsenic (Fowler's solution), hexamethylenamine and (or) belladonna, in the opinion of Forschheimer.

SPASMOPHILIA DIATHESIS.*

BY DR. SAMUEL A. BLAUNER.
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CONVULSIONS in children are not uncommon and in either our private or dispensary practice we often elicit a history of one or more children in a family having died of them. Usually in such cases it is believed that the child has not died of convulsions *per se*, but of some more serious condition in which the convulsion played an incidental part. However, in a few instances where we are thoroughly acquainted with the history of the case, and can exclude some concurrent disease, we are satisfied with the unsatisfactory diagnosis of Infantile Eclampsia.

The importance of convulsions in infantile eclampsia does not lie in the fact that they may become fatal conditions, but more especially because they are preventable, and with proper treatment quickly curable conditions.

In the light of recent investigation, especially that of Finkelstein and Heubner, idiopathic convulsions can no longer be classed as an entity but only as an aggravated symptom of a constitutional anomaly, either latent or manifest. It is considered due to a constitutional condition because autopsies have not yet shown any pathological organic changes and furthermore in its treatment a proper regulation of the diet seems to affect a quick and permanent cure. Moreover, the symptoms are not always apparent, but in a large proportion of cases latent, and can only be elicited by special tests. Usually in such instances the family is unsuspecting of any illness of the child, when suddenly some serious symptom presents itself, especially repeated attacks of convulsions, one of which may terminate fatally. It is on account of this latency and, when symptoms do occur, of convulsive tendencies that the name of spasmophilic diathesis has been given to this disease.

Spasmophilic or tetanoid diathesis then is a constitutional anomaly, finding its expression in a prolonged or transient tonic spasm of either several or all the muscles of the body based on a hyper-irritability of the central nervous system. The disease rarely assumes a classical course and the multitudinous ways in which it finds expression are surprising and it is little wonder that its various forms have been considered distinct clinical entities. In one instance it will show itself as a laryngospasm, or, as it has been called, laryngismus stridulous, in others a partial or general tetany, while in still others there are no apparent symptoms whatever, except that the galvanic current will produce a marked hyperirritability of the peripheral nerve. In the last instance the disease is really in a latent condition and it is only some outburst of some symptom, most usually in convulsions, that the mother and physician are made aware of the existence of the disease.

The disease is by no means a rare one, but unfortunately its symptoms are very frequently latent and often only some special excitant, such as some acute infectious fever, will call forth either one or more of its symptoms. In these latent types, general convulsions is the usual symptom, and as such convulsions are serious and may end fatally, we can readily see that if they are dependent on a spasmophilic diathesis we are dealing with a doubly sick child.

Until very recently the initial convulsions that frequently mark the onset of acute infectious diseases of infancy and early childhood were thought to be part of the disease itself based on a hyper-irritability of the central nervous system peculiar and normal to childhood. That it is due to hyper-irritability of the central nervous system there can be no doubt, but that it is normal to childhood must be vigorously denied, as can readily be proved by the galvanic current. No doubt in some instances the convulsions are but a symptom of the disease itself, but oftener it is best to know that they are really due to the independent condition of spasmophilia. And as they can and not infrequently do end fatally, we must make special effort to recognize the presence of the disease in order to treat it accordingly. The history of the following case will illustrate the above.

A child five months old was admitted for cough, which was of several weeks' duration, although child showed no visible symptoms of tetany. Close examination revealed all the symptoms of a mildly manifest spasmophilia. On the second night after its admission the temperature suddenly rose to 106 with diarrhœa and marked convulsions. Convulsions were more or less continuous and lasted forty-eight hours, when the child died. Section showed beginning hypostatic pneumonia of both lower lobes and mild inflammation of the intestines. Brain and cord showed nothing unusual.

The symptoms of spasmophilia are varied and at times extremely complex, simulating occasionally some organic nervous affection. Convulsions, tetany and contractures are extreme symptoms and occur usually in aggravated and neglected cases. It is therefore not advisable to await these symptoms but to depend on the minor and less important symptoms which generally speaking are invariable, and when in doubt to resort to the galvanic current which surely will differentiate this condition for us.

Spasmophilia almost invariably occurs in artificially fed infants in early childhood from the third month till the third year of life. Before this it almost never occurs. The child may appear well fed and flourishing and may never have had any gastro-intestinal or other disease condition, or it may be a sickly, underfed, rickety infant having had great difficulty with its digestion. Physically the child may appear in perfect health or it may show the evidences of the most advanced rickets and marasmus or other attending consequences of improper feeding. The child is probably brought to the physician for some other condition and the physician incidentally observes a peculiar pasty-like appearance and on crying or labored movements a peculiar stridulous crow. On questioning, the mother will probably tell you that the child is subject to these crowing attacks and not infrequently with them becomes deeply cyanosed. Further examination will, as a rule, quickly reveal other symptoms pointing to a tetanoid condition, and we may satisfy ourselves that the peculiar crowing breathing is nothing less than a true laryngismus stridulous.

Until very recently, and even now, our text books are wont to speak very lightly of this symptom and to regard its importance only in relation with its differential diagnosis from true croup. They seem to look upon laryngismus as an entity or as a condition concomitant with Rickets. Rickets may or may not be present, for

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the cause, artificial feeding, which produces one may produce the other, and therefore ought to be looked upon as accidental. But more important than this is the fact that Esherich has reported several cases of suffocation in laryngismus stridulous and in the light of this new fact we must look upon this symptom as a very threatening one.

Laryngo-spasm occurs in almost all cases of supasmophilia, and when present, even though other symptoms are absent, this condition should be suspected, for true stridulous respiration occurs only exceptionally in other diseases. When in doubt, however, the galvanic current should be used which will quickly settle the diagnosis. As a rule, however, other symptoms are present which makes the question of diagnosis a very simple acair. In such cases we can discover a "tic" or contracture of the orbicularis palpebrarum upon slight tapping of the facial nerve just in front of the lower lobe of the ear. This is known as the facial phenomenon or Chvostek's symptom. In more marked cases slight tapping anywhere on the face will produce a contraction of some corresponding muscle or group of muscles and in advanced cases even the slightest irritation of any peripheral nerve in the body will produce the same phenomenon.

Another more or less constant symptom is Trousseau's and consists of an artificially produced tetanoid spasm of the hand. The tetany produced here is the same as in true tetany and therefore needs no description. It is produced by constricting the child's arm just above the cubital fossa with either our hand or some bandage, and within a few minutes a true tetany will be manifested but which will promptly disappear when the pressure is relieved. In the case of children this symptom is almost diagnostic of spasmophilia.

Of high diagnostic importance is the presence of galvanic irritability and this is invariably present in all cases of either latent or manifest spasmophilia. It is a constant symptom and in latent cases, even long before attacks of convulsions occur, is the only symptom.

We know that in healthy children the peripheral motor nerves will begin to react only to a minimal milliamperage, but in cases of spasmophilia reaction will occur to greatly reduced strength of the current. Of course, the normal and pathological figures will vary, depending on whether the contraction is anodal or cathodal, opening or closing contraction, but in as much as the variance of figures between the normal and diseased condition is most marked in the cathodal opening contraction we dismiss all the other reactions from our consideration and use only the cathodal opening contraction for diagnostic purposes.

Mann and Thiemich, in a large series of cases, found the following figures. That in normal children under eight weeks of age cathodal opening contraction was 9.28 milliamperage and in children over eight weeks KOC, 8.22 m. a. But in children with spasmophilia, manifest cases showed KOC 1.94; latent cases 2.23 and in cured cases 7.9. Here we readily see the great difference of the galvanic irritability between healthy and spasmophilitic children and inasmuch as the figures for healthy children are more or less constant, it is safe to say that all KOC that require less than 5 milliamperes is of pathognomonic significance. Another interesting feature is the nature of the muscular contraction. In healthy cases the reaction is a quick sharp contraction of the muscle while in pathognomonic cases it is much more slow and sluggish.

There are other symptoms besides those enumerated, but as they are more or less inconstant in ordinary cases we will not discuss them in this brief paper. Convulsions or tetany are advanced symptoms occurring as a rule only in serious and neglected cases and as such should always be looked upon as very threatening danger signals.

The diagnosis of this condition ought never to present any difficulty and rarely puzzle us in differentiating it from other diseases. A child under three years of age, artificially fed, with symptoms of convulsions, spasmodic breathing, with Chvostek's and Trousseau's symptom, cannot possibly be suffering with any other disease than spasmophilia; and if in doubt, the galvanic current will surely dicerentiate it for us. Sometimes, however, there is but one symptom present which will make the diagnosis a little doubtful, but even here the KOC of the galvanic current will quickly come to our aid.

Laryngo-spasm is sometimes of congenital origin in earliest infancy. It has no special significance except that it may be mistaken for laryngo-spasm of spasmophilia. The very early age and absence of other symptoms will quickly preclude any such possibility.

Laryngo-spasm sometimes occurs in organic brain conditions of infants, but here too is a differential diagnosis easy. The croup of catarrhal laryngitis and diphtheria may simulate laryngo-spasm, but the history of infection, "cold," cough, and moreover the fact that the croup is not a true inspiratory spasm but more an expiratory phenomenon will make it easy of diagnosis. Sometimes the spasms may take the form of an opisthotonos and closely simulate acere bro-spinal meningitis and especially when it is accompanied with general convulsions, but the age, absence of high pulse respiration and temperature and presence of marked galvanic irritability will surely differentiate it.

As to the etiology little is known. In a general way it may be said to occur between the twelfth week and the third year of life, and between these limits of rather rare occurrence. Artificial feeding seems, however, to be the main etiological factor, for the rarity with which the condition occurs in breast-fed children would seem to indicate that there must be something in or about cow's milk responsible for this symptom-complex. Finkelstein believes that it is due to a disturbance of the intermediary metabolism produced only by animal milk, while others ascribe it to the various constituents of the milk, but up to the present time nothing definite has been determined. In some instances children who have been solely breast-fed and who have never shown any disturbance of any kind, will immediately exhibit symptoms of spasmophilia when put on cow's milk and will just as quickly lose these symptoms when put back to the breast, showing conclusively that artificial feeding is a very important if not the only etiological factor of spasmophilia. Hereditary predisposition seems also to play its part, for in not a few cases are we able to obtain a neurotic history of either one or both parents.

In spasmophelia we have one of the few constitutional diseases easily and quickly amenable to treatment, and on this account there is little excuse for a child to succumb to any one of its symptoms. A child who may be having repeated attacks of convulsions or who

may be showing marked spasms of stridor or even be in a state of true tetany will quickly improve as a rule within twenty-four hours by proper treatment. The main thing in the treatment is diet and the child must be given a milk-free diet and be put on either plain boiled water, weak tea or a weak solution of one of the various cereals, for at least one day, if need be for two or three days. Here it is necessary to state that under no consideration should the child be put back on a milk diet until all symptoms have disappeared, for not infrequently will even a minute quantity cause recurrence of the symptoms. When all symptoms have disappeared the more careful plan to adopt is to give not more than one teaspoonful of milk with the first trial, and if no symptoms occur after a lapse of 24 hours to give one teaspoonful of milk to each bottle of barley water. If symptoms do recur the child is to be put back on barley water. In this respect some cases are very obstinate and symptoms recur as soon as we add milk, but usually after several starvations and with some cod liver oil and phosphorus, the child will begin to improve.

If the child is able to stand a teaspoonful of milk to each botlle of barely water, we can then quickly increase the quantity, so that at the end of several days the child will be getting about one or two ounces of milk to each bottle; at the same time giving cod liver oil with phosphorus. Here it may be pertinent to observe that perhaps the child is being too long underfed, and its caloric requirement not being met; the child nevertheless seems to lose very little in weight and by its action and general appearance indicates a much healthier condition.

In accurate febrile conditions ushered in by convulsions it would be safer to treat for spasmophilia even if this condition cannot be diagnosed. The convulsions may but be a manifestation of a latent spasmophilia and as such convulsions may terminate fatally, it would not harm the child to be put on barley water for twenty-four hours. Moreover, twenty-four hours of starvation at the beginning of any acute illness in childhood is not such poor treatment.

The following case of convulsions was apparently cured after short treatment: by cow-milk-free diet.

I. F., patient 21 months old, was admitted to the Lebanon Hospital Dispensary, October 24th; Russian parentage; there were four other children, one of whom had convulsions five years ago; child bottle-fed from beginning; formula unknown.

Mother says that the child has been catching its breath for a long time and for the past three months had been subject to convulsions, one of which occurred while under examination.

Examination showed a very highly anæmic child, emaciated, palpable spleen and liver; throat slightly congested with slight bronchitis. Otitis media for past five days.

Oct. 24th, child was put on barley water. Returned on

Oct. 28th, no convulsions while on barley water. Barley water and cooked barley with plenty of water.

Oct. 31st, no convulsions. Same diet with addition of bouillon.

Nov. 7th, no convulsions. Diet continued with teaspoonful of milk to bottle of barley water.

Nov. 11th, diet continued with ounce of milk to each bottle of barley water.

Since then the child is practically well.

CASE II:—

This case is one where convulsions occurred after child was removed from breast and placed on cow's milk.

L. B., eight months old, seen at dispensary; parents American; family history negative except that the mother was of highly nervous temperament. Child was breast fed for six months. Fed every two hours and night feeding. While on breast no history of convulsions; then put on Borden's milk, formula not given. One month later child developed convulsions; these became frequent and at times two and three a day; also had laryngismus stridulous and Chvostek's and Trousseau's symptom. March 25th, placed on barley water. March 28th, Chvostek's sign slight, not stridulous. Treatment continued. March 30th, suspicion of strdulous breathing. Treatment continued; April 1st, all symptoms gone; one teaspoonful of milk to bottle of barley water. April 4th no symptoms, same proportion of milk to barley water, to be increased gradually to one ounce of milk. April 11th no symptoms; 1½ ounces of milk to each bottle of barley water, to be gradually increased to four ounces of milk. April 21st, all symptoms gone; limited diet of milk.

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THE TREATMENT OF OSTEOMYELYTIS—REPORT OF A CASE.

(With Literature on the Subject.)

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I HAVE within the last year seen a number of cases of osteomyelitis which have taken a very long time to get well. It seemed to me that there must be room for improvement in our methods of treating these cases. I consulted several authorities, and this paper is largely a record of a portion of my wanderings, in the form of quotations from the various authors. I read many authors besides those quoted, but the substance did not differ from the ideas herein set forth. Prior to the publication of an article by Nichols of Boston, all were pretty well in accord as to methods of treatment, but since that time some of the authors have adopted Nichols' ideas more or less.

The following quotations from the older anatomies and text books of Surgery indicates that the endosteum is of little importance, and that the main object in treatment is thorough removal of the infected medulla. The newer text books recognize the importance of the endosteum and continuity of the medullary cavity.

Gray's Anatomy.

"Later in life the periosteum is thinner, less vascular, and the osteo-blasts have become converted into an epithelial layer, which is separated from the rest of the periosteum in many places by cleft like spaces, which are supposed to serve for the transmission of lymph.

The interior of the bones of the limbs presents a cylindrical cavity filled with marrow and lined with a highly vascular areolar structure, called the medullar membrane or internal periosteum, which, however, is rather the areolar envelope of the cells of the marrow than a definite membrane."

Note: The text lays great stress upon the blood supply of the bone through the periosteum, but says nothing of the powers of the marrow and endosteum.

Histology—Bohm—Davidoff, second ed., 1900:

"In the new born and in young individuals the periosteum is composed of three layers; an outer layer consisting mainly of rather coarse, white fibrous tissue bundles that blend with the surrounding connective tissue, a middle fibro-elastic layer, in which the elastic tissue greatly predominates; and an inner layer, the osteogenetic layer, vascular and rich in cellular elements, containing only a few smaller bundles of white fibrous tissue. In the adult the osteogenetic layer has practically disappeared, leaving only here and there a few of the cells of the layer."

Note: No mention of the endosteum as having any power to regenerate bone. Practically no osteoblasts in adults.

Walsham (1903) eighth ed.:

"The pus may be reached on dividing the periosteum. The incision should then be extended along the bone as far as the periosteum has been raised. The pus and blood may be seen coming from the softenend diaphysis, when by means of a trephine, gouge, or spoon, the center of the end of the diaphysis should be reached. In an early case we should avoid opening the general medullary cavity, or injuring the epiphysis or joint. When, however, the pus has already spread into the central canal, a groove must be cut along the shaft of the bone with an angular gouge, etc. Having exposed the full extent of the suppuration, all blood and pus is removed from beneath the periosteum, all broken down marrow and pus from the central canals, afterwards *wiping out the infected area with carbolic acid* 1 *in* 20 *or bichloride of mercury* 1 *in* 1000, all the antiseptic being forthwith swept away: then the cavity is dressed by placing iodoform gauze strips in contact with the bare bone, *in the hope that necrosis will not ensue, or do so only to a limited extent.*"

Note: While he does not always open the medullar cavity, which is the site of the infection, he only removes broken down marrow and pus, does not curette.

"Bone repair: The osteogenetic activity of the periosteum has been excited by plugs soaked in chloride of zinc, 5 to 10 per cent., or in turpentine. Pieces of periosteum and bone of animals have been grafted in. However, there is not sufficient evidence that living periosteum and bone can be grafted in so that the graft itself persists and the cells in it actually form bone; it is supposed rather that when inserted free from germs, the graft forms a favorable scaffolding which is invaded by osteogenetic cells from the neighboring marrow and periosteum, producing new bone whilst absorbing the graft. Hence there appears no necessity to make use of grafts from a recently killed animal, certainly not a living one; and bone taken from the same patient or from another, e. g., undergoing amputation, appears to offer no special advantage. Handy aseptic materials of proved service are (1) decalcified bone in chips. (2) Calcined bone in chips or powder. (3) Plaster of Paris mixed with 1 - 20 carbolic acid to the consistency of a thick cream. Dead bone is removed, the surrounding bone scraped and gauged until vascular, healthy bone is reached; all crannies are sponged out with an antiseptic and the cavity is dried. Then the material is rammed in level with the surface and a gauze dressing applied above."

Da Costa—Osteomyelitis; treatment:

"In treating do not wait for fluctuations, but incise at once, break through the bone at one or more points with a gouge or chisel; chisel away diseased bone, and if necessary *curette the medullary canal.* Irrigate with hot corrosive sublimate solution or hot salt solution; *swab with pure carbolic acid;* use iodoform plentifully; pack with iodoform gauze; dress with hot antiseptic fomentations; drain the joint if it is involved, etc."

Necrosis; treatment:

"The dead bone should be removed by sequestruum forceps, the cavity scraped by a sharp spoon, the lateral edges of the involucrum cut down until the cavity which formerly contained the sequestruum is very shallow. The wound is irrigated with hot salt solution, dried, painted with pure carbolic acid and then with alcohol, again irrigated with salt solution and firmly packed with iodoform gauze.

The simple removal of the sequestruum often fails to effect a cure, and even in the most satisfactory cases healing requires a very long time."

Note the curetting of medullary canal, the swabbing with pure carbolic.

Modern Surgery, Park, 1907 (acute osteomyelitis):

"The pus cavity (the medullary canal) should be scraped and disinfected with hydrogen peroxide and cauterized with zinc chloride, etc."

"The packing of old bone cavities is of importance and operators should appreciate the reason for so packing them. The method of extension is by filling up beneath and around it with granulation tissue which later may ossify."

Filling of bone cavities: "Our methods of removal of sequestra and cleaning out of bone infected cavities are now simplified and made safe. The difficulty which is still universal is to secure a rapid filling or closure of the cavities. If we could be certain of cleaning out every particle of infected tissue and the removal of every germ which might excite putrefaction, then we might resort to Schede's plan and allow even a large cavity to fill with blood clot and await its organization, but no complicated and infected cavity in such tissue as bone marrow can be so treated to a theoretical degree of perfection. Therefore disappointment often follows this attempt."

Keen's System of Surgery (C. H. Nichols, Boston):

"The primary area of infection is always in the bone marrow, the bony trabeculæ and the cortex are destroyed only secondarily. Once the organisms have gained access to the marrow, they produce a toxin which causes necrosis of the adjacent marrow cells, and this necrosis may extend over a very considerable portion of a long bone before marked infiltration with leucocytes occurs.

The extent to which cortical necrosis occurs depends upon two things—the amount of destruction of the endosteum and the amount of separation of the periosteum. If much of the endosteum is destroyed, a corresponding amount of necrosis of the inner layers of the cortex will occur. Repair inside the cortex is brought about by the formation of granulation tissue which arises from the marrow, and by a formation of new bone which is produced by the endosteum. The vitality of the cortex depends entirely on the vitality of the endosteum within

and the periosteum without. If the endosteum is not destroyed, the internal layer of the cortical bone will retain its vitality. The necrosis and inability of repair of the cortical bone are the chief causes of the persistence of sequestra and sinuses in chronic osteomyelitis.

The sequestruum is surrounded by the involucrum of new periosteal bone, which after a time becomes dense bone like the cortex with relatively small power of repair, and in such a case if the sequestruum is removed it seems a cavity surrounded by a dense shell of cortical bone which has not power of central growth sufficient to close the cavity."

Treatment of the acute stage: "One very important fact should be borne in mind; the marrow spaces everywhere communicate freely, although often indirectly, with each other, so that removal of the cortex alone is sufficient to drain the entire diameter of bone. It is extremely undesirable, however, as frequently is done, to remove with a curette all suppurating marrow. In most cases by the time the operation takes place the destruction of the marrow and endosteum is so extensive that a certain amount of necrosis of the inner layer of the cortex is sure to follow and a sequestruum will ensue. In favorable cases operated on very early, so as to give drainage before destruction of the endosteum is extreme, a sufficient amount of endosteum will remain to regenerate the marrow and the wound will heal by granulation. Complete regeneration of the bone will then take place without the formation of a sequestruum. Such a fortunate result, however, can be looked for only in exceptional cases."

Treatment of the Sub-acute Stage—Splint bone present:

"The old surgical axiom was not to remove the sequestra until they were freely movable, which meant practically that they were not removed until after the involucrum was completely formed and ossified."

"1. Removal of sequestruum while periosteum is plastic. The time for this operation is when the periosteum has begun well marked ossification in its deeper layers, and yet ossification not so far advanced as to form a rigid periosteal shell. The average time is about the eighth week after the acute infection has been stopped by the evacuation of the pus. The layer of bone formation should be about ⅛ inch in thickness. Remove and examine bits—Needle, X-ray.

Operation: Remove beyond point of periosteal suppuration and endosteal thickening; approximate surface of periosteum and new bone, close wound.

Subacute stage. Splint bone not present. Remove sequestruum about two weeks, i. e., when involucrum has diameter ½ original bone."

Chronic stage with dense involucrum.

"Bearing in mind that such cavities are surrounded with dense bone lined with very ineffective granulation tissue, it is necessary to provide some means by which a more satisfactory blood supply can be obtained; so that in such cases it is necessary to cut along the shaft of the bone through the dense plug across the narrow canal, at either end of the cavity until vascular marrow is reached. Many more of these cases will fail than will succeed even in the best of hands."

American Practice of Surgery—Bryant and Buck, Vol. (Geo. A. Peters, Toronto):

"Compact bony tissue has very little regenerative power. The formation of new bone is almost altogether the work of the periosteum and of the membrane lining the medullary spaces. New bone is formed in two situations, in the central cavity by the membrane lining the medullary spaces, and on the surface of the shaft by the periosteum."

"The question of opening the medullary cavity, * * This recognition of the value of the endosteum is certainly important, and the value attaches in an equal degree to the thin prolongation of endosteum which lines in the cancellous spaces in the expanded extremities of the bone. But, important as the endosteum is, the periosteum covering the bone is vastly more important, and it is difficult to see how splitting it from end to end of the shaft of the bone can be justified. If the shaft should perish from end to end it is by no means difficult to pass an instrument through the trephined opening at one extremity to that at the other, so as to thoroughly drain the medullary cavity throughout."

"Removal of the sequestruum. After the bulk of the sequestruum has been removed, much discretion is required to estimate just how much of the pus-smeared granulation tissue that lines the cavity should be removed. Some authorities recommend swabbing the whole cavity with 95 per cent. carbolic. If such an application be made it must necessarily result in the destruction of at least some of the bone cells and osteoblasts lining the periosteum."

"The question of healing bone cavities after the removal of the sequestruum. It must be borne in mind that in the vast majority of cases, nature is perfectly capable of looking after such cavities and bringing about a complete closure. The process may require many months, and occasionally, of course, a cavity remains open and discharging for years. Remove sequestruum as early as possible after its separation. Even in the large bones such separation may be counted upon to have occurred by about the 12th to the 13th week."

"In regard to the incorporation into the cavity of foreign substances, an almost infinite number of different materials have been recommended by as many operators. Most of these have been tried and found wanting."

"Reporting Mosetig—Morschof's work, Silbermark has credited him with successful treatment of 445 cavities, occurring in 121 individuals. The filling which he uses consists of: Iodoform 60 parts, spermaceti and oleum sesame, of each 40 parts. The cavity to be treated is first thoroughly cleansed by curetting, and afterward is swabbed out with 1 per cent. solution of formalin, then dried with swabs and finally by a current of hot air. The hardened filling is gradually replaced by granulations, which subsequently become developed into new bone."

J. Shelton Horsley, Med. Rec., October 20th, 1910:

"New bone is being constantly formed from the periosteum and from the granulations which have separated the sequestruum: and this new formation, constituting the involucrum, is necessarily thoroughly infected with pus organisms, as it is constantly bathed in pus during ossification."

Acute (Osteomyelitis) (Brewer):

"The bone should be exposed by a generous incision, the periosteum divided and stripped from its surface, and the medullary canal freely opened by the chisel and mallet. The infected marrow and cancellous tissue

should be thoroughly scraped away, and the cavity disinfected with pure carbolic acid or formalin and packed with gauze. This method is the most radical and is indicated in the severest type of the disease to quickly overcome the threatening toxæmia. It has the disadvantage, however, of removing the endosteum, which results in slow repair, and many of the cases never heal without secondary operation. Simple removal of a strip of the cortex without disturbing the cancellous structure, as recently advocated by Nichols, is the operation of choice in the majority of cases. This provides adequate drainage, insures more rapid repair, and is associated with far less destruction of tissue."

Dr. W. H. Cushing, of Boston, reports a case in which the entire shaft of the tibia was removed and another generated from the periosteum. He attributes the result largely to the time at which the operation was performed when the periosteal osteoblasts were in the most active stage but before an involucrum had formed."

Journal A. M. A., May 31, 1902 (John Prentis Good):

Reports case of tibia, upper half, which was thoroughly opened and cleaned out, and the cavity packed for six weeks, at which time a portion of the cavity was grafted with Thiersch grafts and six weeks later the remaining portion. All grafts took and the patient was discharged cured thirteen weeks from the date of his first operation. The condition was a great hollow in the bone lined with skin, not a good cosmetic result, but a remarkably prompt recovery.

I will report one case which, to my mind demonstrates the importance of preserving the endosteum and avoiding "thoroughly scraping and disinfecting the medullary cavity."

Case:—T. K., male, laborer, aged 65 years. Applied for treatment, January 16th, 1910. The history is that at the age of 13 he was treated for fracture of the left tibia, lower third, since which time the left leg has been one inch shorter, but gave him no trouble until about December 15th, 1909, when he had a throbbing pain in the leg, and called a doctor who poulticed it for about one week, at the end of which time he made a skin incision without anesthesia and evacuated pus from lower third of leg. Wound was packed and drained until January 16th, i. e., about five weeks after the onset.

At this date the following condition was present. There was a three inch opening on the anterior surface of the left leg just above the ankle. The lower end of the bone was separated from the shaft at the site of the old fracture. There was a longitudinal opening in the lower portion of the shaft about two inches long from which pus was discharging. The probe went upward in the medullary cavity without encountering resistance for its full length. The periosteum over the lower third was destroyed excepting a band posteriorly about one-half inch wide. The lower third of the shaft was necrotic.

January 19th: The leg was amputated one and one-half inches below the tubercle of the tibia, at which level the periosteum appeared normal; below this level it was much thickened and adherent. The marrow at this level was necrotic and purulent, but the endosteum was not destroyed. A portion of the necrotic marrow was gouged out, care being taken not to scrape the endosteum. The flaps were partially united loosely with drainage.

March 5th: Discharged from hospital. Cavity in bone filled with healthy granulation. Granulation area of stump about three by one and one-half inches; healthy.

June 4th: Unhealed area one-quarter by one inch posterior portion of stump; area over bone-end healed. So far there has been discharged one very small spicule of bone.

August 22nd: Stump is entirely healed. The patient is wearing an artificial limb. Motion at knee joint perfect.

CONCLUSIONS.

Acute: Operate early, extensive opening; do not scrape medullary cavity or apply caustics.

Subacute: Operate before involucrum becomes rigid and dense.

Cavities: Remove "scar" bone.

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Conglutination, and the Employment of Complement-Fixation Test in Streptococci Infections.—The excellence of many American contributions to clinical pathology is marred by the velocity with which the writer transcribes his experiments, regardless of amplifying, for the student, the process of ratiocination by which and through which he places his experiment in the line of scientific development.

Swift and Thro, in a series of experiments just published in the Archives of Internal Medicine, Chicago, vol. 7, No. 1, January, 1911, page 24, describe very clearly what they do, and how. Their conclusions are, that conglutinin reactions are of not much more value in differentiating various strains of streptococci than the agglutinin reactions. (Their experiments, they admit, are not conclusive upon this, however.)

But Swift and Thro do not show the distinctive nature of conglutinin. Nor do they explain what the work signifies in contradistinction to agglutinative reactions, except that hemolysis follows excessive conglutination.

Immune bodies, specific for different strains of streptococci can be demonstrated by means of complement fixation tests. It is possible by the use of this test to differentiate specific infections (they say, meaning among streptococci).

How the conglutinin reaction varies from that of agglutinin is not described, and the writers assume our knowledge of the modus operandi of the Wassermann's complement fixation test. Now, who really knows this? The entire question of immunity may lie in this understanding.

Bordet and Gay, to whom Swift and Thro adjudge their initiative in the study of conglutination, say plainly that experimenters differ in the explanation of hemolysis.

Amboceptor is the sensitizing agent. Alexin is the complementary substance.

Bordet says well in ridiculing our plays upon terms, in ascribing to complement the power to unite because it possesses a receptor, or has an element of combining power. This is a circular passage neither advancing nor ascending.

Bordet, writing later, with Streng (Centralblatt f. Bakt., 1. Abt., No. 49, 1909, p. 260), continues the work of analysis, and employs the term "conglutinin" of serum. And he lays down the principle that the

phenomenon of union of antigen with the activating elements of serum lies in the field of *adhesion* rather than in that of chemism, or chemic reaction so-called; and is therefore a phenomenon of absorption.

The agglutination and hemolysis of the red cells by sulfate of barium (Gengou) and by silicilic acid (Landsteiner and Jagic) and studies of colloids in great number seem to bring the force of adhesion to the front as the moving influence in the reactions of serum with their antigen.

Now, we may pass beyond this, to the fact noted by Wells, that in the staining of and solution of stains in cells the faculty of penetration of cell wall, or not, is the crux. In this factor lies the nature of fat metabolism. And the nature of the mechanism of the cell wall, pointed out by Piersol in 1895.

It is interesting to connote the wasting during disease, especially during the stadium of infections, and the febrile period. This is a wasting disproportionate to the element of feeding, even as shown, in typhoid, when we follow the method of intensive alimentation of W. Gilman Thompson, and provide a high caloric diet, using milk, milk sugar, eggs, etc., up to 4000 calories.

Bordet sums up the question as far as 1909: that Ehrlich and Sachs are wrong, and that the amboceptor (sensitizing element) of beef serum will unite with red cells in the absence of any special complement. The actual value of beef serum in this reaction is due to the presence of conglutinin.

Gengou and Gay have shown that the albuminoids of serum, of milk, etc., become equally eager for alexin in the presence of precipitin.

The red cells of she-goat passed into fresh beef serum will conglutinate—adhere—but do not hemolyze. (Because the beef and the goat belong too closely together in zoologic relation). The conglutinin becomes sufficiently attracted for adhesion, but not enough so to cause hemolysis. In other words, a molar adhesion ensues and not a molecular one, so that tthe molar cohesion is not disrupted.

The colloidal substance (conglutinin) may exist in different degrees of states of aggregation. This fact must be borne in mind, and Bordet asserts the need of further study.

In French the word agglutiner means to stick together, to cohere; and the word conglutiner means to stick together, to adhere. This may explain the choice of Bordet in his word.

Conglutinin is a substance which differs from agglutinin in that it may produce hemolysis and is a colloid albuminoid so integrated as to respond to specific antigens, or separate strains of toxins according to the strain of pathogenic organism elaborating the particular antigen.

What conclusion as to this reaction and to the question of immunity can we reach? The fact that red cells in the same body do not react upon each other shows that there is some equation of cell wall structure to be overcome, and that this is overcome by the antigen in the presence of sensitizing and complementary agencies.

Returning to the old story of mechanical effects, some one or more of which must be called into being by the working of any machine, we shall have to do here with factors of occasional solubility and insolubility, produced by the action of three or more elements. Two of which may be soluble, and one or more of which divide this solubility. Or, of two mutually insoluble elements, each of which are soluble in a common third element.

The integrating mechanism would be that of proteid groups, attached to the values producing these scales of solubilities and insolubilities, and in so many words carrying them about.

The metabolism would involve the power to approach and distance these factors. Also, we should have to describe the process of this action and the catalytic powers which attach the solubility-factors to and detach them from the proteid masses.

In the proteid molecule we shall find the idiosyncracy which varies the complementary equation, and builds up individual immune bodies in the fashion of carrying and loosing the energetic bodies which are fatty or carbohydrate and force producing.

Wells has stated that this proteid molecule has arms of sodium, magnesium, calcium, etc.

Here is the next step.

The Relation of Gall Stones to Cancer of the Bile Tract.—Dr. John A. McGlinn (N. Y. Med. Jour., March 18, 1911) quotes from Moynihan who states that one of the most serious sequelæ of cholelithiasis is malignant disease of the gall-bladder or of the ducts. The close relation between gall stones and malignant disease has never lacked recognition, though opinions differed as to which is the cause and which the effect. Opinion is now universally in favor of the view that it is the irritation of the gall stones that determines the incidence of cancer, the view that was first supported by Klebs. In his record of cases Courvoisier found the following results: Of eighty-four cases of primary cancer of the gall-bladder, there were seventy-two in which stones were found; in two others stones had been passed in the motions. In the remaining ten, no mention of stones is made; in four of these there were certain pathological changes: Scarring of the duodenal pupilla, stricture thereof, and dilatation of all the bile passages, which indicated, unquestionably, the former presence of calculi.

The author then reports the post mortem records of cancer of the gall-bladder and ducts, which show that gall-stones were present in eight of the eleven cases of primary cancer of the gall bladder. In primary cancer of the bileducts stones were present in three of the five cases. If we accept the theory of irritation as a cause of cancer we can learn an important lesson in the treatment of the disease.

No mater how early visceral cancer may be diagnosticated very few cases can be cured. The time to cure cancer is before it develops; in other words, we should teach how to prevent cancer. If gall stones are the cause of the biliary passages, then, if the stones were removed early, cancer would not develop. While it is said that gall-stone may exist for an indefinite time and produce no symptoms, and thus render their diagnosis difficult or impossible, the author cannot fully agree with the statement. That gall-stones may exist and produce no symptoms directly referable to the biliary passages is no doubt true, but that they produce no lesions of adjacent organs with definite symptoms is a fallacy. The author concludes that gall-stone is a surgical disease.

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THE EDUCATIONAL EXAMPLE OF THE MEDICAL PRACTITIONER.

IN a previous editorial, we have called attention to the advancement of formal medical instruction in the last quarter of a century and to the influence which it has exerted upon other professional requirements, not to mention strictly scholastic institutional work. In the present article, we wish to speak of the educational example of the physician himself, as a unit and as a member of professional organizations.

At the outset, we exclude from consideration men who are essentially teachers, chemists, pathologists, bacteriologists and investigators along other scientific lines more or less intimately connected with medicine but who, whether holding the medical doctorate or not, are not engaged in actual practice. We also exclude the class, comparatively large in numbers, as in any other profession or business, who lack initiative, industry or skill to do more than follow, in a more or less conscientious and careful way, the routine evolved by others. It should be clearly understood, however, that the fact of being in general practice by no means necessarily places a man in this latter class or that the presence in the profession of such a class involves discredit, either to the profession or to the individual.

At a rough estimate, a quarter of the profession may be considered as educators, either in the sense of contributing, at some period and, in many cases, almost continuously, something of value, either in an inventive way, in the elaboration of a new principle, or in the recording of valuable facts requiring close study and observation. This same fraction of the profession is also subserving an important educational function, in applying, elaborating, testing, revising and translating for more routine use, the higher grade of scientific research necessarily devolving upon highly skilled and equipped specialists. Indeed, without the clinical knowledge of the larger class to direct the energies of the research men in practical directions, to curb the frequently distorted or curiously ignorant ideas of the latter and to make the discoveries of the laboratory practically useful, the highest grade of scientific work along medical lines could not receive sufficient popular support and it would not only fail to serve its ultimate humanitarian end but it would degenerate into the idlest form of speculative amusement.

If we contrast the medical profession with any other occupation, not essentially limited to students and teachers, we are surprised at the paucity not only of professional literature but of what may be termed educational effort. Without in any sense claiming that the medical profession is less mercenary and more conscientious in its service to the individual than is the legal, clerical, didactic or any other, it may be stated that in no other line of human activity is there so marked a tendency to regard the immediate occupation as educational material both for one's own future guidance and for that of his confreres and to study the individual case with reference to scientific and sociologic, not to mention humanitarian advancement.

The actual professional reading, attendance at meetings for mutual improvement, and private research work of the class of our own profession which truly represents the entire professional spirit, is fairly equivalent, on the average, to the pursuit in college of any single study for the entire scholastic week of five days, every year. Many men, by no means in the class of research nor out of active practice, double this amount of work. But, at the lowest estimate, it is equivalent to the completion of an average collegiate or professional course of four years, in every three years of practice. A physician attending regularly, the meetings of the A. M. A. and its various state and county branches and a local academy of medicine, devotes at least ten full days and thirty half days—the latter consisting mainly of evenings which the average professional or business man considers as his own for recreation—easily equivalent in time, mental exertion and much more so in expense, to five weeks at a college or about one-seventh of the entire college year.

Another point to be considered in the general educational influence of the medical profession upon education generally, is that, both before and after the formal period of study the work involved is much harder than the standard for collegiate work or the maintenance of a reputation for scholastic attainments. We have seen "scholarly" and mature medical students, with baccalaureate and even master's degrees from literary colleges of good standing, flunk at the examinations for the M.D. not from inattention or neglect,

but simply because they could not drive their mental engines at the standard pressure required in the medical school.

With the exception of the absolute, logical mental labor required in the pursuit of the higher mathematics, practically every kind of study is included in the work of the medical student, undergraduate or postgraduate. There is some of the easy-chair study of the linguistic and literary courses, including, indeed, translation from foreign languages. At a recent meeting of one of our national associations of specialists, with a membership of about thirty, a letter was read from a correspondent in Germany. Pursuant to the chairman's offer to have the letter translated into English, it developed that everyone in attendance had understood it in the original. The amount of technical reading in German and French and occasionally in other foreign languages, modern and classic, carried on in a purely incidental way by hundreds of physicians, exceeds the part of their work for a scholastic degree.

No scholastic study, not even history, equals either in amount or necessity of accuracy, the mnemonic requirements of medicine, as especially instanced by anatomy and posology.

Medicine also brings into play the laboratory and mechanical technic and the observational powers of the various chemic, physical and "natural" sciences.

A very important, though scarcely realized factor in medical study, especially that of the practitioner, is originality. Even though no significant discovery is made, the physician must do much more than follow the work of another. He must exercise the initiative, must apply and duplicate, corroborate or correct another's observations. He is surprised to find his lay friends apply the term *study* to the non-critical reading of books, even of books which involve no scientific or historic acumen. Some time ago, a friend made a day's trip out of town for the sake of gathering practical help from a master of arts whose major study had been yeasts. Not only did he fail to gain any practical information, but, so far as he could judge, from the hazy recollection of facts and the utter lack of appreciation of general principles, shown by his supposedly learned acquaintance, the standards in the postgraduate department of a prominent college are lower than in any standard medical school.

THE VIVISECTION COMMISSION.

ANTIVIVISECTIONISTS were interested in two bills before the New York legislature, last winter. The more stringent bill failed to receive serious attention while the more moderate one, calling for a commission to investigate the entire subject and to report in 1912 has reached a stage at which its passage seems assured.

At the risk of offending some of our readers, we express regret that a bill providing for impartial study of this vexed problem should have been exposed in a quasi official manner by members of the Medical Society of the State. We need not stop to discuss why vivisection has been called into question, but must recognize the fact that it has been so called. In opposing investigation by lawful means and in a lawful manner, we simply place a powerful weapon in the hands of our antagonists. If we set the seal of mystery and secrecy on our laboratory doors, we invite imagination based on stories of the inquisition, reports of humane societies dealing with all sorts of cruelty, and early records of surgery and animal experiment antedating the era of anæsthesia. It would have been far wiser to have met the antivivisectionists half way, to have invited impartial investigation, and to have prepared a law granting equal privileges to and providing for equal supervision of all qualified scientific students of physiologic and pathologic reactions.

As we have stated before, the medical profession has little to fear from legislatures or from popular opinion, unless it places itself in opposition to the former by taking the attitude that vivisection must either be entirely without control or that laws for its control must exempt, at the outset, professional experimenters.

One point in particular deserves the closest consideration by the medical profession. Quite aside from the question as to whether animal experiments have produced valuable results and as to the fact of their being attended necessarily or adventitiously, by cruelty or the infliction of pain, the contest with antivivisectionists has shown that there exists, in certain quarters, the idea that official connection with an institution should afford special exemption and privileges and, conversely, that independent investigators may be sacrificed, if necessary, as pawns in the game with the antivivisectionists.

Without regard to democratic ideals in general, but solely from the standpoint of the welfare of the medical profession and of the ultimate advancement of science, it would be better to lose the contest with the antivivisectionists than to concede the establishment of a specially privileged scientific class or to sacrifice the principle of independent research.

But the fear of unreasonable restriction of animal experiment is entirely unwarranted. Legislatures, in the aggregate, are conservative and intelligent, and while they may be warped by strictly political forces or, possibly, by financial pressure, so far as ordinary ethical and economic issues are concerned they may

be trusted, in the main, to follow public opinion. Unless our personal contact with the laity has been unusual, popular opinion is strongly in favor of allowing animal experiment to continue with very little interference. Indeed, the average intelligent layman and laywoman, seems to entertain a rather exaggerated notion of the practical accomplishments of serums and antitoxins and even to hold the manifestly absurd theory that the value of an animal experiment is directly proportionate to the pain inflicted. Moreover, broadly speaking, a large share of the community is composed of persons who have very little regard for the suffering either of animals or of other human beings, if their own advantage is involved, even indirectly. A fair-sized minority of the population, including the approximately half per cent. of adult males embraced in our own profession can be depended upon to view the problem from the scientific standpoint and to exert an influence many times as great as its numbers. There remains, it is true, a large and influential class which is certain to respond to any appeal to the better and kindlier emotions. But, after all, this class is possessed of some sense and, still more important, it is very thoroughly imbued with the Judaic and Christian dogma of the duty to conserve human life and of the right of man to exploit the lower animals.

THE EFFICIENCY OF BLOOD-LETTING.

IN medicine, as in all phases of human existence, there are fashions that come and go, that are revived and that hibernate. Fifty years ago phlebotomy dominated medical practice as inexorably as any fad that sways the feminine nature. There was much good in phlebotomy—and a very great deal of harm; the harm was by reason of its indiscriminate use, without consideration of the appropriateness of such a procedure. To-day blood is almost never let, no little courage would be required in the physician venturing upon this slight operation—because it is not now in the fashion. And yet there are many cases in which blood-letting is clearly indicated—some, indeed, in which it is absolutely essential to save the patient's life. It must, however, not be done haphazard—after the manner which brought the operation into disrepute; it must be done scientifically, rationally, and only after due consideration of the pathological conditions in the given case. Upon such basis the lancet may be appropriate in cardiac dilitations, venous engorgements, arteriosclerosis and emphysema, when these conditions are characterized by dyspnœa, orthopnœa, lividity, high tension, hyperemia or œdema; in pneumonias and perhaps in pleurisy; in cerebral congestion and hemorrhage, hepatic congestions, uremia, suppressed menses, hyperpyrexias, acute infections, and systemic intoxications generally. Other affections in which this procedure has been advised are: delirium tremens, sunstroke, (when the blood is thick and mucous), gas poisoning, gout, chlorosis, tetanus, embolism and thrombosis, plethoras, peritonitis shock, lividity, the high tension pulse, bronchial asthma, comas, eclampsia, migraine, scarlet fever, intense asphyxia, erysipelas, pericarditis. Here one thinks of the painter who, when asked how he managed to get such wonderful colors on his canvas, answered that he mixed his paints with brains; when the physician proposes to venesect it is clear he must use his brains in determining the why and wherefore of his procedure.

Mr. John W. Milne* (surgeons are not called "Doctor" in England) makes a strong plea for the extended use of blood-letting—but scientifically and not in an empirical or routine manner, or for unwise reasons, or for no reason whatever. The operation is slight and simple if the parts and instruments are clean, and the vein constricted on the proximal side, to avoid the entrance of air. Milne's first vivid impression of blood-letting was got in 1899, when an epileptic was thus treated by him in a country cottage. Venesection was resorted to after every other means had failed to interrupt the succession of fits and to restore consciousness. The patient, a girl of seventeen, had an average of a fit weekly. Before he opened the left median basilic vein the face was quite purple, with dilated pupils; there was profuse perspiration; the right heart was tremendously engorged and threatening failure, the beats becoming irregular both as to time and quality. The girl was ordinarily somewhat plethoric in habit of body, and the menses were then just commencing. Twenty ounces were drawn; upon which the patient ceased her twitching, squinting, and so forth; she sat up in bed, recognized those about her, and asked what happened, and what all the trouble was for. Every symptom disappeared, she was quite well the following day, and remained so (without needing bromides or any other medication) for three and a half months, when a slight fit occurred. In another case a young man who had epileptic fits at three weeks' intervals, was bled to faintness; and thereafter had no fit for twenty months. A third case was of impending apoplexy in a retired farmer, a heavy drinker, who presented evidences of arterial degeneration, the urine indicating the small cirobotic kidney. Milne found this patient very excited, the face engorged, the eyes bulging, the pulse of very high tension, the heart dilated downward and to the left. The

*The Efficacy of Blood-letting. The *Practitioner*, Dec. 1910.

sufferer was irritable, confused and giddy, the pulsations surging in his ears; he feared as impending calamity, and constantly reverted to the fact that hemiplegias has been common among his ancestors and his collaterals. Being relieved of twenty-seven ounces of dark blood (which showed very little tendency to coagulate) he felt much better; the engorgement subsided, and the next day he was in his usual health, except that in three or four days he had a very slight ingravescent hemiplegia, and one may have fairly assumed that, had phlebotomy not been done, a fatal apoplexy must have taken place.

In another patient, aged 63, mental symptoms predominated over the engorgement. There had been a peculiar condition which, responding to potassium iodide, was concluded to be either a gumma or a serous cerebral effusion. Assuming some weakness of the vessel walls, and considering the extra strain of the patient's excitement, Milne venesected, reasoning that the thickness—and therefore the resistance and elastic recoil of a vessel may indirectly with its sectional area, which depends on the volume of blood present. Following upon the venesection all excitement passed away, the patient's mind returned to normal, and he had restful sleep for the first time "in many a day."

Such cases as these testify eloquently to the value of judicious venesection.

THE DETERMINATION OF NEPHRITIS BY CLINICAL METHODS.

VARIOUS articles have appeared in the last few years, tending to upset the faith of the physician in his ability to diagnosticate nephritis, and, especially, to distinguish among the various forms of nephritis and between such lesions as are ordinarily designated nephritis and other essential renal lesions. In view of the long experience almost entirely corroborative of the optimistic belief that the careful clinician could determine nephritis by the urine, such articles have been disturbing. They have, apparently, excused careless methods of practice and have led the physician to question how far his diagnostic methods are reliable in other conditions, especially those involving a laboratory technic much more complicated than that necessary for urinary examination.

Speaking as a clinician, it seems to us that the former optimistic belief is tenable, that the physician can determine nephritis—not to dispute as to matter of nomenclature nor as to the propriety of classifying certain chronic lesions as inflammations—and even the varieties of nephritis with a reasonable degree of accuracy.

It may be conceded that albumin, in minute amount, is a normal constituent of the urine and that under excessive strain, as after an athletic contest, notable quantities may filter through the kidneys without indicating anything of practical pathological moment, although the advisability of such strains may be seriously questioned by the hygienist. Thus using reagents of great delicacy and looking for traces, one may say that albuminuria is not an indication of renal disease. So, on the other hand, the physician who fails to eliminate a vaginal discharge by catheterizing or advising a simple cleansing douche before saving a sample of urine, or who overlooks the presence of gonorrhœa, cystitis or hemorrhage, may diagnose nephritis in a great many cases in which it does not exist. Yet, in our experience, it is very rarely that an albuminuria, obtained under ordinary conditions, and not accompanied by plain intities may filter through the kidneys without indicating on clear urine, by heat or nitric acid ring, occurs when the subsequent course does not establish the diagnosis of nephritis. There will be found, in adolescents, less frequently in adults whose work involves prolonged standing, especially with exposure, as in the case of street car men, certain cases of albuminuria free from casts, and tending to eventual recovery. Without discussing whether such albuinuria is physiologic or pathologic, and, if the latter, whether it is due to a definite kidney lesion, adolescent and orthostatic albuminuria or that due to analogous physical strain and exposure, is, for practical purposes, to be considered apart from that marking ordinary forms of nephritis. But, unless one's practice is exceptional, albuminuria, determined by fair tests and with proper elimination of adventitious conditions, is mainly due to the kidneys.

With reference to casts, we are ready to admit that concentrated sediment from large quantities of urine, spread over many slides, will usually yield a few specimens. Every epithelial surface is constantly going through life cycles in the case of its elements and casting off debris. Local inflammatory disturbances are inevitable, if not strictly normal in the case of epithelium subjected to insults from ingesta. It is perfectly conceivable that similar conditions, scarcely warranting the use of the term nephritis, occur in the kidney, as the result of chemic irritation. But, as examinations are commonly made, the presence of even a few casts, may be safely depended upon as an indication of nephritis although, from the practical standpoint, physical strain, transient toxic irritation, etc., must be discounted.

With regard to the differentiation of forms of nephritis, we are also ready to admit that a laboratory worker, without clinical experience of with only that form which regards diagnostic methods solely as a matter of interest to be checked in the laboratory and necropsy room, classifying every cast seen under the

microscope, can collect data contrary to the prevalent belief in the relation of certain types of disease to certain types of casts. The wise clinician will soon learn that, in any kind of microscopic study, he encounters individual cells or other histologic elements and groups, which he cannot positively classify and which he must pass over. Whether this personal limitation can be entirely removed by skill in mounting and practice in examining, is questionable.

The nomenclature of casts is practically based on the appearance of the mass, partly on characteristic elements adherent to it, as renal and blood cells, crystals, etc. The terms, hyaline, fibrinous, waxy, etc., refer merely to appearance and have no chemic significance. There is still doubt as to whether casts are due primarily to the solidification of albuminous matter within the tubole or to degeneration and homogeneous fusion of exfoliated cells. That certain granular casts are due to the latter process seems to be demonstrated experimentally, but, while it is difficult to explain the solidification of liquid exudates, especially as the clear casts are not regarded by the best authorities as fibrinous in the literal sense, we are not yet warranted in assigning all casts to an epithelial origin. According to the earlier view, granular and fatty material in casts indicated degeneration of the mass itself and, hence, chronicity, while, if casts be regarded as due to degeneration and fusion of cellular debris, the opposite must be true. However, in either case, the life cycle of the cast, if this expression be allowed, occupies at most a few days so that the chronicity of the lesion cannot be connected directly with the appearance of the casts. A few months ago, a rather puzzling case presented in which the urine had been repeatedly found normal by chemic tests, even five days previously, but in which an abundance of albumin and of perfectly clear, hyaline casts, with and without epithelium, were now discovered. A sufficient number of cases examined early, would determine pretty positively, the sequence of changes in casts.

While it is undoubtedly true that a few casts of various kinds may be found in any form of nephritis, it seems safe to infer parenchymatous lesions from a relative abundance of epithelial casts while their absence would indicate either a glomerular or an interstitial disease. Broad casts, with comparatively little epithelium would indicate a late tubular nephritis, after desquamation had occurred. Blood, not accounted fc by causes of rhexis, would indicate an early, acute inflammation or congestion, the differentiation between congestion and inflammation being difficult clinically and marked by a gradual change pathologically. In spite of certain suggestions from experimental nephritis and the qualification as to the shortness of the life cycle of the cast, it is generally held that marked tendencies to fatty and granular appearances, indicate chronicity.

The scepticism as to the ability to diagnose renal lesions from the urine is of value in calling attention to the simpler means of checking the sufficiency of urinary excretion. As in the case of the heart, we have been inclined to think too much of the lesion and too little of the function. It is also of value in leading each clinician to estimate his own personal equation of efficiency in diagnosis. But the negative results of highly competent authorities should be interpreted not to discredit the attempt to determine and differentiate renal lesions from the urine, but to emphasize the importance of combined clinical and laboratory study of disease and to discourage the attempt to classify natural phenomena of any kind according to artificial divisions.

A Fourth State of Matter?—Prof. Briggs, of Leeds University, recently discussed before the Royal Institution the question whether ultra violet light is corpuscular in its nature, or whether its nature is that of ethereal pulsations, as is usually supposed. One of the professor's conclusions is that there may be a fourth state of matter in which the corpuscles or electrons play the same part as do the molecules in the kinetic theory of the gaseous state. In the latter theory it is assumed that the particles by their dartings to and fro with great velocity collide and thus produce all the phenomena of pressure, expansion and so forth in gases. There are four different forms of radiation that can be passed at will through the atoms of matter; and a study of the particles after they have emerged again from the atoms will show what has happened to them in the atom, and hence something of the constitution of the atom itself. These four forms of radiation are known as the alpha, beta and gamma rays of radium and the X-rays. The first are atoms of helium, the second electrons, whilst the third and fourth have hitherto been considered pulsations in the ether analagous to light waves. When a particle encounters an atom it passes through it and on to another; it loses a little energy at each collision and finally (when it has lost all) passes out of recognition. When an alpha particle passes through a gas it moves straight through every atom it meets; it suffers scarcely any deviation from its course until its velocity is nearly spent. Most of the atoms it passes through are ionied (rendered conductors of electricity). The gamma ray moves along in a straight line and penetrates atoms with far greater ease than either of the other radium rays; sooner or later it "disappears inside an atom, branding on a large share of its energy to a beta particle which takes its place. Prof. Briggs concludes that the gamma rays and the X-rays are corpuscular and not ethereal pulsations; they may be electrons, corpuscles of negative electricity" which have assumed a cloak of darkness in the form of sufficient positive electricity to neutralie them. "And since it appears that ultraviolet light possesses many of the properties of these rays, this light may likewise be corpuscular in its nature. And if this ultraviolet light be such, why then may not all light be corpuscular?

BIBLIOGRAPHICAL

A Text-Book of Medical Diagnosis.—By James M. Anders, M.D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, and L. Napoleon Boston, M.D., Adjunct Professor of Medicine, Medico-Chirurgical College, Philadelphia. Octavo of 1,195 pages, with 443 illustrations, 17 in colors. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $6.00 net; half morocco, $7.50 net.

The special purpose of this book is primarily to furnish an improved method of determining the clinical features of disease, and to emphasize the importance of corollating symptoms with the structural changes on which they are dependent and their organismal etiology, in the interest of accurate diagnosis. This method, as shown in the first chapter, renders the question of individualization of cases a prime requisite, free from serious difficulty, and will provide a proper basis for rational treatment.

The new features which commend themselves are the brief pathologic definitions of special diseases, the illustrative cases, and the numerous diagnostic tables for comparison. There is also a summary of diagnostic features and laboratory diagnosis. The text is profusely illustrated with photographs and colored plates which facilitate the grasp of the technic of diagnosis.

The authors have certainly done wonders with a single-volume-text-book, and it cannot fail to find a great demand, as every general practitioner will require a copy, because of the help to be obtained from it in one's daily practice.

It is a fine piece of book-making, and afforded at the low price of six dollars for nearly 1200 pages!

Studies in Cardiac Pathology.—By George W. Norris, M.D., Associate in Medicine at the University of Pennsylvania. Large octavo of 233 pp. with 85 original illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $5.00 net.

The text of this interesting high-class work is beautifully illustrated by Photographs of specimens, showing the various cardiac lesions.

This is not a complete work on the pathology of the heart, the text being mainly in the form of an explanation and an elucidation of the illustrations for practical purposes.

The book will be found of great help in the study and diagnosis of heart cases, and is worthy a place in any medical library.

A Handbook of Practical Treatment.—In three volumes. By 79 eminent specialists. Edited by John H. Musser, M.D., Professor of Clinical Medicine, University of Pennsylvania; and A. O. J. Kelly, M.D., Assistant Professor of Medicine, University of Pennsylvania. Volume II: octavo of 865 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Per volume: cloth, $6.00 net; half morocco, $7.50 net.

The second volume of this great work is before us and is full to the brim of most instructive practical matter for every-day use.

The first article covers the treatment of every conceivable affection of the heart, including its surgery according to the latest methods. Typhoid fever and its surgical complications is then fully considered; pneumonia, diphtheria, scarlet fever, measles, tuberculosis, toxemia, syphilis, gonococcic infection, vaccinia, variola, chicken pox, cerebro spinal fever, cholera, plague, yellow fever, dengue, influenza, rheumatism, tetanus, rabies, anthrax, glanders, actinomycosis, madura foot, foot-and-mouth disease, pertussis, mumps, miliary fever, glandular fever, dysentery, leprosy, typhus fever, tropical diseases, ocular and aural complications of the infectious diseases, surgical treatment of the joint complications of the infectious diseases, and animal parasites, with a full index completes the volume.

No active practitioner can afford to be without this work.

Hospital Management.—A Handbook for Hospital Trustees, Superintendents, Training School Principals, Physicians, and all who are actively engaged in promoting hospital work. Edited by Charlotte A. Aikens, author of "Hospital Training-School Methods and the Head Nurse;" "Primary Studies for Nurses;" "Clinical Studies for Nurses." 12mo of 488 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $3.00 net.

This volume will be found of great service in promoting hospital work in every department, excepting the medical.

No pains have been spared to make the text thoroughly practical and simple, so that any novice may understand. The various articles have been written by experienced authors best suited to do the work.

The book can be read with profit by all who are actively engaged in any way, in hospital work. It is unique in its way and will certainly be appreciated.

The Care of the Baby.—By J. P. Crozer Griffith, M.D., Clinical Professor of Diseases of Children in the University of Pennsylvania. Fifth revised edition, 12mo of 455 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $1.50 net.

This excellent manual for mothers and nurses, containing practical directions for the management of infancy and childhood in health and in disease, comes to us in its fifth edition, thoroughly brought up to date.

There is no doubt as to the value of this work for the purpose indicated, and it can be recommended with the greatest confidence.

Diseases of the Stomach and Intestines.—By Boardman Reed, M.D., Consulting Gastro-Enterologist to the Pottenger Sanatorium, Monrovia, Cal., late Professor of Diseases of the Gastro-Intestinal Tract, etc., Temple University, etc. Illustrated. Third edition thoroughly revised and largely rewritten, octavo, pp. 1,037. Price, $5.00. New York, E. B. Treat & Company 1911.

The entire text of this valuable work has been revised and largely rewritten for the present edition, and a new chapter added on "Arteriosclerosis in Relation to the Affections of the Gastrointestinal Tract." It is practically **a new book** and thoroughly up-to-date, as reference is even made to "606."

It is a single-volume work and not only embodies the latest advances and discoveries in the diagnosis and treatment of gastrointestinal diseases, but the author has made his instructions so plain and simple that practitioners will find it a real help.

A full account is given of the simplest and least disturbing methods of determining the character of the secretory and excretory work of the organs having a part in the processes of digestion and metabolism, together with an unusually full exposition of the subject of diet and of the therapeutics of the digestive disorders in general, in addition to "The Gastrointestinal Clinic," in which the diagnosis and treatment of all the known diseases of the tract are separately considered. "A Symptomatic Guide to Diagnosis" is a novel feature, which will enable the practitioner to trace any obscure or puzzling symptom to its possible cause, and thus arrive at a correct diagnosis.

The author's large experience in this special field of medicine eminently qualify him for the task he has so successfully accomplished. No more positive proof of the value of his work could be afforded than its augmenting sales and this early demand for a new edition. The text is original and practical.

State Board Questions and Answers.—By R. Max Goepp, M.D., Professor of Clinical Medicine at the Philadelphia Polychlinic. Second Edition Revised. Octavo volume of 715 pages. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $4.00 net; half morocco, $5.50 net.

The progress of medicine naturally necessitates frequent revision of a work of this kind, in order to bring the text to date. Many changes have been made both in addition and in omission for various reasons.

The present edition includes questions on serum and vaccine therapy, the serum diagnosis and treatment of syphilis; chemo-therapy in general; diseases due to intestinal parasites and other tropical disorders; and the new heart physiology, the myogenic theory, and graphic methods of studying the phenomena of the circulation.

The work has been admirably done and may be considered of the first class in every way.

While the book is intended for those who wish to prepare for State Board examinations, it will be found useful for other purposes.

A Hand Book of Obstetric Nursing for Nurses, Students and Mothers, comprising the course of instruction in obstetric nursing given to the pupils of the training school for nurses connected with the Woman's Hospital of Philadelphia. By Anna M. Fullerton, M.D., Formerly Obstetrician, etc., to the Woman's Hospital, etc. Seventh revised edition. Illustrated, 12 mo., pp. 272, $1.00. Philadelphia, P. Blackiston's Son & Co., 1911.

In the revision of this useful book, a chapter has been added on "The Examination During Pregnancy," and one on "Obstetric Operations," with many changes here and there in the text. Bier's method of suction hyperemia in the treatment of breast abscess is described and many new illustrations are given.

A Treatise on Diseases of the Nose, Throat and Ear.—By William Lincoln Ballenger, M.D., Professor of Laryngology, Rhinology and Otology in the College of Physicians and Surgeons, Chicago. New (3d) edition, thoroughly revised. Octavo, 983 pages, with 506 engravings, mostly original, and 22 plates. Cloth, $5.50 net. Lea & Febiger, Philadelphia and New York, 1911.

Three editions of this popular work have been called for within as many years, and this shows the enthusiasm with which it has been received by the profession. The text is eminently comprehensible and practical, thoroughly illustrated, and fully to date. The medical and surgical treatments of the whole region is included. In fact it is a combined treatise and atlas.

It is a superb hand-book for the student or the practitioner.

Many new features have been introduced including the vaccine therapy, Goldsmith's plastic operation and others.

International Clinics.—A quarterly of illustrated clinical lectures and especially prepared original articles on Medicine and Surgery. Edited by Henry W. Cattell, A.M., M.D. Volume I, Twenty-first Series 1911. $2.00. Philadelphia and London, J. B. Lippincott Company, 1911.

This publication contains as usual a vast amount of valuable matter.

It includes the spread of pellagra, additional information about "606," the treatment of typhoid fever, modern infant feeding, recent advances in our knowledge of nutrition and a superb résumé of the progress of medicine and surgery with much other interesting material. The retrospective part is well worth the price charged for the whole. Get it and see for yourself.

Litora Aliena, from the Boston Medical & Surgical Journal. Octavo, 78 pp. Price 50 cents. W. M. Leonard, Publisher, Boston, Mass.

This is a series of letters sent to the Boston Medical and Surgical Journal by one of its editors during a recent European trip.

These letters present scenes and interests as they appear and appeal to a physician and contain much of that rarity in medical literature, reading that is both entertaining and instructive.

Science from an Easy Chair.—By Sir Ray Lankester, K.C.B., F.R.S., with 84 illustrations. Octavo, pp. 423, $1.75. New York, The MacMillan Company, 1911.

This is a useful book for the purpose of interesting readers in science. It includes science and practice, university training, Darwin's theory, poisons and stings of plants and animals, protoplasm, life and death, something about the stars, and a great amount of other valuable information.

Public libraries should certainly have it, at least for younger readers.

The Principle or Form of Life.—This will never be found in the study of the substances present in the cell. The nature of the life in the cell is that of a process. The living cell is a machine. We cannot tell the nature of a pump by analysis of the iron or wood of it, although in the physical and chemical properties of these substances lies the explanation of their adaptability to use for a sucking machine. What are the activities of the cell? These must be changes in states of aggregation, in tension, in elasticity, etc. Such mechanical operations require all study.

CORRESPONDENCE

To the Editor of THE MEDICAL TIMES:

I wish to enlist the sympathy of the profession in my own case and that of others—should they exist.

I am an oculist, have been established about 15 years and have enjoyed a nice little clientele. Now, however, the optometrist comes along, pretends that he has authority from the State to test the Sight and does it, supplies the glasses, so that the oculist is out of the question entirely. The people who formerly came to me are now lured away by the optometrists' advertisements, so that shortly I will have to go around the country selling specs' if things go on.

There seems, however, to be a remedy for the evil, and that is to get the optometry law declared unconstitutional, which is absolutely the case inasmuch as it constitutes a close corporation, and moreover it is unconstitutional for the following reasons:

1. It says that after the 1st January, 1909, anyone wishing to be an optometrist must pass an examination and

2. Must have passed 3 years in a registered optometrist's office, or

3. Have attended for 2 years at a registered optical school, which is utterly impossible as there were *neither* registered schools *nor* registered optometrists.

Can you help A STRUGGLING OCULIST?

RETROSPECTIVE

Changes in the Blood According to Recent Studies, and Hastings' Technique of Staining.—I. For some years methods of clearly staining the cellular elements of blood have gone through modifications. Sahli's new book on methods (1911) refers to Hastings' development of a permanent bloodstain derived from a combination of the best point in previous methods and with the change in material, namely that Hastings employs the final precipitate which Leishman avoids. This new stain is described rather briefly and insufficiently in the Journal of Experimental Medicine, 1905. Because of a hasty presentation of the subject matter many may not be acquainted with the method.

Romanowsky, in 1890, was early able to stain bloodsmears well. But with a truly "Mr. Hyde" difficulty the exact methylene blue was in doubt, for some samples gave the right effect and others did not. No one could explain why this occurred. Finally Nocht employed Unna's polychrome methylene blue to dilute the Gruebler stain, and as the polychrome blue is alkaline, a small amount of acetic acid was needed to render neutral. But this gave success to the "azur," a Romanowsky stain. Lazier and Ewing studied the use of this stain, used in combination with eosin, as Romanowsky did, and Giemsa and Goldhorn showed that an alkali, such as lithium carbonate if added to the methylene blue was more efficient than the polychrome methylene blue of Unna. Ascetic acid is weakly added to neutralize, but not too much. And if too much acid is added, no addition subsequently of alkali will restore the activity desired.

Jenner developed the point of fination by combining methyl alcohol with the eosin. So that a rapid or "bedside" technique became possible. As Jenner says in his 1901 article in the British Medical Journal,—the reds stain terra-cotta; nuclei of whites are blue; the platelets of polymorphonucleus are red; basophile granules are violet; if we wash in tap water instead of distilled, the red stain is increased, and the blue is weakened. Jenner considers the onyphil nature of the polymorphonuclear granules is herewith shown as such (basic).

The Romanowsky azur stain as developed by Giemsa and Michaelis lacks the advantages of the Jenner method in the point of friction. Leishman saw this. But the Leishman article particularly advises us to employ the freshly mixed stain to secure the nascent effect, and says that the precipitate is to be avoided.

Hastings uses:

A.	Distilled Water	1000 cc.
B.	1% Acqueous Sol Eosin.....	100 cc.
C.	Polychrome Methylene Blue (freshly prepared)	200 cc.
D.	1% acqueous Solution of Ehrlich's Rectified Methylene Blue.....	70–80 cc.

This "D" is to be added up to the formation of the characteristic "scum" and the adhering azur. The precipitate which forms is what is desired, and we use enough to saturate 100 cc. of methyl alcohol. This methyl alcohol may need some sodium carbonate to neutralize the slight acid reaction which is frequently has. When the stain so prepared reaches this final point no adherence to the sides of the glass will be observed.

To stain basic elements employ concentrated. To stain the acid elements place in dilute watery solution. Immediate fixation takes place.

Can the azur stain be active through the presence of "positive ions" or is there a new compound constituted in the activity of alkali, eosin and blue?

II. Distilled water will produce hemolysis.

It is due to change in osmotic pressure, which causes cell injury. If a cell is cut it does not lose its hemoglobin in solution. In isotonic solution some substances will cause hemolysis. Urea will do this. So will ammonium salts. If the red cells are placed in superconcentrated salt solution water escapes and the red corpuscles shrink, but no hemoglobin escapes. When hemolysis occurs (Wells: Chemical Pathology) it is due to some action on the stroma of the red cells, for when the stroma is hardened in formalin and has the lecithin and cholesterin removed by ether, saponin cannot cause hemolysis.

The presence of cholesterin in excess will prevent hemolysis, so it may be cholesterin in the stroma which is acted on the hemolytic agent. Mathes contends that red corpuscles cannot be dissolved by hemolytic serum or by pancreatic juice until they have been killed; as heated serum does not kill them, this is presumably done by the complement. Corpuscles that have been killed can then be dissolved in their own serum. Probably (continues Wells) complement is produced in leucocytes, and in many cells, but removal of the spleen does not prevent either the presence of complement or the formation of immune bodies.

III. Reviewing these fundamental points will be frequently needed, for modern methods require the application of these cellular principles. Piersol long ago pointed out the importance of study of the cell-wall. Stains do not act in all instances unless the cell is fixed. Overton, in 1900, showed that some stains will enter the living cell without injuring it: neutral red, methylene blue, tolnidin blue, thionin, and safranin. These stains can be washed out again. In contrast,

sulphonic acid dyes, as indigo-carmine and anilin blue, do not penetrate the living cell at all. The second group is not soluble in oils or fats or fatty acids. The first group is soluble in lecithin, cholesterin, and cell-lipoids. Further, stains which penetrate the living cell are more soluble in lipoids than in water.

As solubility is a reciprocal activity, it may be true that chemotanis is due to the attraction of similar elements in masses which are not absorbable. Viewing the important relations of fat-compounds in solubility, and the effects of their adhesive properties, we can see that contractility or the evidence of elasticity and cohesion is the expected response. So that carbohydrate energy may be set free in that response producing a cycle. This in turn will release oxygen and may burn fat, and so re-establish equilibrium.

IV. The red cells are chiefly cytoplasmic.

The white cells are nuclear in manifestation. The red cells are conveyers of fat, oxygen, and fabulum generally. The white cells are activators. So that the latter seem nuclear and male in character, and katabolic. The former (reds) are cellular, female, and anabolic.

V. In the theory of immunity lies the secret of why and how we resist or succumb to any antigen or infectious agent. So important is this, for we are all subjected to the infectious elements, that a study of the blood assumes paramount importance for us at all times. Hastings' work, as an American student, must give us pleasure and pride. The peculiar values of the several type cells are yet to be revealed.

Pulmonary Emphysema.—There are five forms of pulmonary emphysema (dilation of the alveoli vesicles and atrophy of their walls): (1). The hypertrophic form is most frequently seen in practice; it is called also vesicular, substantive, idiopathic or large-lunged emphysema. There is frequently a congenital, hereditary weakness of the pulmonary parenchyma, with a persistently high intra-alveolar tension; the dilation is thus caused. Or the disease may follow chronic coughs, bronchial asthma and especially whooping-cough—the tendency in such affections being to increase the intra-areolar tension. Glass blowers, workment who lift heavy weights and musicians using the larger wind instruments are also prone, and for the same reason. (2). Acute vesicular emphysema as an acute dilation of these tissues by strong inspiratory efforts in such affections as bronchitis, bronchopneumonia, angina pectoris or cardiac dyspnœa. In the cardiac cases there is the unfortunate combination of violent inspiration with cyanosis and pulmonary congestion. 3. Interstitial emphysema is the presence of air in the interlobular spaces or beneath the pleural tissue by reason of vesicular rupture from wounds, severe coughing in whooping cough and other severe lung affections, from straining at work or at stool, during convulsions or in labor. This form is not infrequent in young children. The air may press along the trachea into the neck; after tracheotomy it may develop in the reverse direction. Pneumothorax may develop. A friction sound as of the crumbling of paper, is the only means of diagnosing this lesion until we see the subcutaneous emphysema in the neck. (4). Atrophic, senile, or small-lunged emphysema occurs in the aged who have small chests with very obliquely placed ribs and other signs of senility; there is a history of winter cough and dyspnœa extending through many years. (5). Compensatory emphysema is characterized by distension of normal lung tissue to fill the pleural space resulting from contraction of other portions of the lung, as in tuberculosis, broncho-pneumonia, chronic interstitial pneumonia, pleurisy with effusion, tumors and so forth. When there is deficient lung expansion (of either a circumscribed or a large area) the remainder of the respiratory organs will expand to compensate for the areas thus put out of action. If the causal condition is removed early enough this form of emphysema disappears; otherwise a true hypertrophic emphysema will develop. Localized emphysema will occur about broncho-pneumonic areas, tuberculous cicatrices or when extensive pleural adhesions prevent lung expansion.

The treatment of pulmonary emphysema is largely palliative; but when it is conducted judiciously and with insight we can accomplish much to relieve the distress and to prolong lift. However, we do not hope to restore emphysematous to normal lung tissue; a consideration of the pathology would preclude this hope.

We advise that a climate suitable for the individual patient be sought out; and having succeeded in the search, that a permanent home be made in the climate selected. A warm, dry, equable climate, devoid of strong winds, will suit most patients. The hygienic and physiological life is insisted on—the open air daily; a little exercise; the feet always warm and dry; undue exposure and wetting of the feet to be especially avoided; appropriate underclothing; everything done to guard against recurring attacks of bronchitis. A wholesome diet, simple but nutritious, is essential. The nutrition must be improved. Milk and clear soups, roasted or broiled beef, mutton and lamb, chicken, fresh fish-meats in moderation; moderation in sugars and starches; no rich gravies or confections; the stomach should never be overloaded. The emunctories (bowels, kidneys and skin) should functionate well; thus we relieve the general venous congestion and consequent dropsy; cathartics, diaphoretics and diuretics are prescribed as indicated. The heart and the circulation are most carefully investigated; strychnine and ergot are used—but sparingly, and only as indicated. Later when venous engorgement and arterio-sclerosis are pronounced we use digitalis and nitroglycerin.

For the accompanying chronic bronchitis we prescribe much as in that disease—ammonium carbonate and muriate, sanguinaria, ether chloride. The upper air passages are carefully examined; all inflammations of the respiratory mucous membranes are treated; all hypertrophies, exostoses, and the like are removed. The cyanosis is treated as in asthma; the inhalation of compressed air or of oxygen may be indicated: venesection may be most beneficial. Alcohol will serve in exhaustion.

Delafield treats the dyspnœa as follows: When this is due to spasmodic contraction of the bronchial muscular coat we give inhalations of the fumes of stramonium, potassium nitrate, chloroform or ether; and internally chloral potassium iodide, belladonna and opium. Dyspnœa due to congestion of the bronchial mucosa is relieved by such drugs as increase mucous flow—lobelia and grindelia robusta; such drugs as stimulate the heart—caffein, convallaria and digitalis; or by dry cupping over the chest walls. Dyspnœa due to contraction of the small arteries is relieved by the

arterial dilators—amyl nitrite, nitroglycerin, chloral, potassium iodide opium; dyspnœa due to inflammation of the nasal passages is treated by local applications. Formulæ: The "emphysema mixture" is employed in hospitals—℞, Potass. iodid. gr. V; morph. sulph. gr. 1-12; tr. bellad. MV; spirit, ether comp. MXLV; aquæ gr. ad ℥ss. Sig. ℥ss. p.r.n. The "A. B. C. Diuretic"—℞ Potass. acet., bicarb. et citrat. āā gr. XV; inf. digit (recent) q.s. ad ℥ij; Sig. ℥ij; ℞ Ext. quebrach. ℥ij; tr. stramonii ℥ij; vin. antimon. MXviij; syn. grind. rob. ℥i; syr. seneg. ℥ss; syr. tolutan q.s. ad ℥iv; sig. ℥i tid. ℞ Pulv. stramon. fol. ℥i; pulv. cascaril. cort. ℥ii; potass. nitrat. ℥ss; pulv. ipecac ℥ss. M. Dry thoroughly: Sig. To be burned and the smoke inhaled during attack of dyspnœa.

Rubella (to which disease the misleading title of German measles is also given) is an acute infection which presents after an incubation of a fortnight, a rash on the face, which extends rapidly over the body, reaching its heighth in 24 hours and disappearing about the end of the third day. There may be a short, indefinite period of invasion; the temperature does not exceed 101° and rarely continues beyond three days; there may be a slight diesquamation; complete recovery with complication is the rule. One of the most characteristic symptoms is enlargement of the post-cervical glands. The bacteriology is unknown (Crandall); rubella is rare in infants under six months but after that age the predisposition seems to be universal as to age and sex. It occurs usually in epidemics, which are most frequent in Winter and Spring. It is less contagious than measles, although in some epidemics the infectivity is very marked. Rubella does not protect against measles and scarlet fever; nor do these diseases protect against rubella.

The incubation may possibly extend to 22 days; this period varies considerably in cases occurring in the same epidemic. Rubella may be contagious for a few days before the rash appears and continue so until complete recovery—which may not supervene until a fortnight from the invasion; it is most contagious on the three days following the appearance of the rash. There are two clinical types of rubella: (1). The measles type. After an invasion of but a few hours, marked by malaise and perhaps feverishness a rash appears on the face and neck and spreads rapidly all over the body. This stage of invasion may be lacking, the rash being the first evidence of illness; the child may awake in the morning covered with the eruption which suggests measles, but which is however pale rose, larger than the blotches of scarlet fever but smaller and less "blotchy" than the measles eruption. The spots are rarely grouped and the skin does not assume the scarlet hue. The rash is most intense on the second day, but fades rapidly and is often not discoverable after the third day. The fever is the highest on the second day, but in many cases is hardly raised for any time. In other cases there is much malaise and heaviness on the first three days; there is occasional fever, nausea, headache and all the evidences of acute illness. Desquamation, when it appears at all, comes soon after the subsidence of the eruption. There may be a faint pigment for a few days after the rash has gone; but this does not persist as does the staining following measles. The throat is often dry and red; but exudates are very rare. Recovery is prompt and practically without complications or sequelæ. (2). The scarlatinal type, which is less common than the measles type. Here the constitutional symptoms are similar to those of the measles type; the difference is mainly in the appearance of the rash. The eruption is copious and very like that of scarlet fever, that of rubella being however lesspunctate and of a more rosy tint. The skin is uniformly red; but the little points about the hair fallicles are faint or entirely absent. In sporadic cases it is most difficult to diagnose from the rash alone; sometimes, indeed, we must wait for desquamation. Even in the distinctly scarlatinal type small maculopopular areas may be found especially on the forehead and arms. In doubtful cases the whole body should be examined; since areas of the measles type of rubella may be found.

Rubella may—rarely—appear in a severe form, with a decided prodromal stage, a marked eruption, a temperature of 103° and decided illness for four lays; vomiting, headache and delirium may further complicate the diagnosis.

The invasion in rubella is very rarely marked by a convulsion, chill or severe headache. Usually the symptoms are those of a mild febrile condition. The fever is rarely above 100; it may however reach 103; highest on the second day it rarely lasts beyond 24 hours. There is no typical chart, the pulse and respiration are not characteristic. The throat is usually red, and the eruption may sometimes be seen on the roof of the mouth. Exudates are not seen except as a complication. Forchheimer describes an exanthem which he considers characteristic, it appears on the first day on the uvula but not on the hard palate, and consists or minute bright rose-red points. The rubella eruption is rarely absent from the face; in this affection and in measles the rash usually appears on the lips, but in scarlet fever the labial region usually remains free. The rubella eruption is rarely confluent except on the face and is seldom, if ever, hemorrhagic; it is sometimes so elevated as to have a spotty feeling as the finger is passed over the skin. Itching on the first day is common. Desquamation is slight; in some cases it cannot be detected; it is light and branny; marked desquamation indicates scarlet fever and not rubella.

Swelling of lymph nodes is a very constant and distinctive symptom of rubella; when this symptom is lacking the diagnosis should be made with caution. The glands most frequently involved are the cervical, the postcervical and the suboccipital. A nest of lymph nodes low in the neck, behind the sternomastoid is especially characteristic. The diagnosis as between rubella, measles and scarlet fever is often difficult and sometimes impossible; yet it is important to differentiate. We should not for five to six weeks isolate a child suffering from rubella; still more unfortunate were it to allow a scarlet fever case to go at large. As rubella usually occurs in epidemics, every suspicious sporadic case is to be regarded as mild measles or scarlet fever until the diagnosis is established. Certain drug rashes (especially that of belladonna) closely simulate the rubella eruption; and there are many unclassified eruptions which may easily be mistaken for the latter. The prognosis of rubella is invariably good, there are rarely serious symptoms or complications. No other treatment is required than quiet in bed while the eruption lasts—liquid diet, sponging and anointing with vaselin or cold cream. More severe cases need the

ordinary anti-febrile measures, as in measles. Isolation for a fortnight is necessary to protect others; the prophylaxis is as in measles.

The Ethics of Vivisection.—From an ethical and legal standpoint, all forms of animal experimentation must be considered together. Such experimentation, however, is quite readily and accurately subdivided into groups whose scientific purposes correspond quite closely with degrees of suffering and, consequently, with the ethical and potential legal consideration of each.

1. Investigations as to habits, fecundity, spontaneous disease and certain superficial anatomic and physiologic studies, as examination of blood, urine, fæces, etc. In such cases, no element of cruelty is involved, beyond such trivial and transient pain as is connected with small lancet wounds and the negligible "psychic" factor of restraint of liberty. In many instances, the victims are really pets and more comfortable than in wild states or ordinary economic domestication.

2. Animals used for the experimental investigation of internal disease, mainly of germ origin, including animals rendered immune and used as a source of serum. The disease may be of ordinary form or intensified or mitigated.

3. Animals used for research or didactic demonstration, under full anæsthesia and killed before the anæsthesia is recovered from.

4. Animals subjected to experimental operation, whether for physiologic, pathologic or surgical purposes, under full anæsthesia, but allowed to recover afterward, with more or less permanent fistula or other permanent anatomic defect.

5. Subjection of animals to violence of various kinds, poisons, deprivations of food, water, oxygen, to cold and heat or other abnormal circumstances for the purpose of studying lesions incidentally and occasionally incurred by man.

In considering the ethics of animal experimentation, we may, in general, ignore the right to life, liberty and the pursuit of happiness, considered inalienable to man. In this regard, prevalent orthodox religious teaching goes even farther than science, as denying anything like soul or mentality to the lower animals and as holding them to be subject to man by divine law. Unbiased scientific opinion, indeed, tends to the directly contrary dogma that there is no essential difference between man and the lower animals, excepting one of degree, so far as the functions of the cerebrum are concerned. Thus, we may say, on the one hand, that animals have souls just as much as man, or, on the other, that the manifestations of human intelligence are simply higher developments of what is termed instinct in animals. Of course, these two statements are far apart in their ultimate significance, but, in the present discussion, they come to have the same practical meaning. It is scarcely necessary to add that any normal problem, in the ordinary sense, loses its significance, when applied to the lower animals, excepting as it reflects and conforms to strictly human morality.

In short, the whole ethical problem of animal experimentation, is limited almost exclusively to the infliction of physical suffering. In this regard, both extremes, materialistic and orthodox religious, are necessarily brought to consistencies of practice. For instance, if there is absolutely no such entity as spirit, and all functional manifestations in animals, including man, are due to physical forces produced in the organism from other physical forces—mainly oxidation of organic material by ferment action—such words as *pain, pleasure, discomfort, liberty* and *morals,* lose their usual significance and, on the one hand, there is no obvious reason why any kind of experiment should not be tried on any animal, including man, and, on the other hand, no reason why these physical forces acting on what is termed the *volition* of the experimenter, should be directed toward experimentation or any other effort, even that of existence. Indeed, the idea intended can scarcely be expressed, since the very vocabulary which we are forced to use, in any language, has grown up under the stimulus of a conception of life which is essentially spiritual.

Likewise, the extremely orthodox dogma theoretically held by many really kind-hearted persons, excludes the word *pain* from application to the lower animals. To be sure, under what would be painful stimuli if applied to ourselves, very similar phenomena of motion and even vocalization occur in the mammalia and other higher classes of animals. So, too, relatively to their anatomic structure, analogous responses occur in the lower phyla of the animal kingdom and in many vegetable organisms. If instinct is absolutely different from reason, if animals have absolutely no vital force beyond that recognized by the materialist, it is difficult to conceive of their having likes and dislikes, of their enjoying comfort or suffer pain. In other words, there is no more sense in employing an anæsthetic in opening a dog's abdomen than in chloroforming a sensitive plant before we cut off its leaves and no greater ethical problem involved in mutilating a rabbit than in forcing hydrogen to take up two atoms of oxygen instead of one, since, in the latter case, the oxygen tends to leave the hydrogen and, to use a figure of speech, the molecule is in a state of discomfort.

As a matter of fact, nearly all human beings, whatever their dogmatic belief, recognize a very close analogy between man and the higher classes of animals, they believe that the primal sensations are shared, somewhat imperfectly, but still to a relatively high degree, by both man and the mammals, birds and even fishes and reptiles, and, perhaps, insects and crustaceans. Their attitude toward vivisection is, therefore, based largely on a balance between sympathy and egoism, individual or of the race. Many persons, not at all scientifically inclined, and ordinarily kind-hearted, are deeply affected with the ancient Judaic conception of the paramount importance of man and the purely servile function of all the rest of creation. It is scarcely necessary to state that the Christian and Mahometan religions are essentially Judaic, nor that this conception is shared by other religions. Thus persons who would not indulge in animal experimentation themselves nor favor needless cruelty to animals, look with disfavor upon any expense of effort or money, intended to ameliorate the condition of the lower animals and would not hesitate to countenance the most horrible atrocities inflicted upon the greatest number of animals, if these would have any appreciable practical effect in relieving human suffering or adding to human enjoyment.

On the other extreme, we have many individuals

who bestow their charity upon dogs and cats rather than upon children and suffering adults and who inconvenience themselves to pamper some four-legged pet.

The average attitude of civilized humanity lies between these various extremes. Without reference to creed or lack of creed, they believe that the lower animals share the ordinary sensations and even intellectual functions of man, although not to so high a degree, and they believe in a moderate and reasonable consideration for the comfort of all animals which manifest interpretable evidence of pain, without reversing the accepted position of man and the lower animals.

With due allowance for the influences upon the young and for the purely æsthetic sensibilities of suceptible individuals, a reasonable view of the matter of animal experimentation is about as follows: We are perfectly justified in sacrificing the likes and dislikes of animals, in taking their lives freely—providing always that the property rights of human beings in animals are not disregarded, as they sometimes are by collectors of material for vivisection—and in inflicting such degrees of minor discomfort as are commonly regarded as inevitable in ordinary commercial handling of stock, in slaughtering for food, and in spontaneous disease or recovery from necessary operations on human subjects. The animal inoculated with an infectious disease or subjected to experimental operation certainly suffers no more than the human being similarly afflicted and, from actual observation, we know that such suffering is not of great acuteness. Moreover, the psychic dread of death, anticipation and acute recollection of suffering, present in human beings, are absent in the lower animals, as far as we can judge.

Very fortunately, such animal experiments as cause great pain are, for the most part, of little practical utility, even in the scientific sense, and while, at times, they satisfy a certain sense of curiosity, at others, they seem to have been suggested by innate cruelty and to have a mere veneer of scientific interest, or even to have been connected with forms of mental perversion now definitely recognized as abnormal sexuality. Again, absolutely cold-blooded investigators have usually found that the liberal use of anæsthesia not only saves time and obviates inconvenience, but is, from the scientific standpoint, less of a disturbing element than the inevitable reflex of pain.

It is seldom that we find occasion to criticise the reports of animal investigations so frequently reported in the medical press, even from the admitted standpoint of a quite unscientific love of the lower animals and dislike of unpleasant details. We recall an isolated instance of the ripping open of a dog's belly to inspect the stomach, but the reporter himself seems to have felt ashamed of his action, at any rate he used anæsthesia for further experiments and found them of greater scientific value. H. Pfeiffer, in No. 3 of Vol. 180 of Virchow's Archives, reports some studies of the lesions produced in viscera by applying boiling water to large skin surfaces. He naively states that a small proportion of the animals die very soon and that the mortality occurred mainly in those imperfectly narcotized, so that it could be attributed mainly to shock. Such experiments seem to us to indicate a lack of what has been called the scientific imagination, not to mention defects which the eloquence of antivivisectionists can readily characterize.

Horribly painful accidents happen often enough to human beings and animals so that any necessary scientific deductions can be drawn without resorting to voluntary infliction of cruelty, while the practically valuable prophylactic, prognostic, diagnostic and therapeutic conclusions are so obvious as scarcely to need any demonstration beyond that already afforded by a clinical experience. Even disregarding the ethical side of such experiments, the ordinary considerations of selfish interest, as applied to scientific devotees, demand that such experiments and their perpetrators should receive the disapproval of the medical profession.

In an article written for a medical audience, an apologetic tone must be assumed for any indication of sentiment or for giving any weight to mercy in the balance against scientific research. No such tone will be necessary in appealing to the public or to legislative bodies, or even to scientific men individually. On the contrary, any experiment, obviously painful to a high degree and not obviously warrantable by direct and practical application to therapeutics, will be denounced in unmeasured terms, most persons will feel aggrieved that punishment cannot be summarily inflicted on the perpetrator, the frequence of such experiments will be exaggerated, they will be set forth as typic instead of rare exceptions, and, on their acount, an attempt, perhaps successful, will be made to prohibit useful research and valuable means of instruction, which imply little discomfort to animals or constitute the surest means of euthanasia.

Infection of the Circle of Waldeyer.—The exact function of this ring of lymphatic tissue is still under investigation. Clinicians regard hyperplasia of tonsil or circumjacent adenoid as malicious, and the common practice is to remove such aggregations with the purpose of avoiding tuberculous infection, mental retardation, or systemic reflexes generally.

Since the function of tonsillar tissue is disputed, we may conclude that the *modus operandi* of reflexes also contains much unknown.

A child is brought to our office suffering from epilepsy. At once we run the gamut of helminthiasis, phimosis, scoliosis, pes planus, eye-strain, and amygdalitis. Shall we operate? But the tonsils are out, and the naso-pharynx has been cleared, we are told. The child's eyes mirror our divagation.

Nevertheless, tonsils in chronic inflammation do cause severe general eractions. Egidi, in the *Bollettino delle malattie dell'orrecchio, naso, gola,* anno xxxiii, October 1910, has recently reported two cases of severe septichæmia from mild tonsillitis. In his opinion the pathogenic micro-organisms pass into the true tonsillar tissue and thence reach the contiguous lymphatics. Putelli, in 1908, reverted to the dual roles between which a distinction lies: *a,* tonsillar tissue as a defense against infection, receiving the antigen and destroying it; *b,* tonsillar tissue as a weak point, one of reception for and entrance of antigen.

Authority is stated for the view that scarlet fever is of tonsillar origin. Egidi warns us to examine the tonsils in all *post-mortems* upon cases of nephritis, appendicitis, rheumatism, endocarditis, chorea of tonsillar type, and tuberculosis. Such serial studies are not extant and those which have been separately made ought to be collated.

Syme of Glasgow discusses the relativity of tuberculous amygdalitis. Milligan had placed it as high as 5 per cent. Wright inclines to say from 5 to 10 per cent. Syme proceeds to make fun of our frequency of tonsillar ablation. He calls it an "obsession of the guillotine." He shows that functional atrophy of the tonsil is indicated by compensatory adenoid hyperplasia in its vicinity. So that enlarged tonsils may be functionally useless, and in such instance their removal is wise.

Lance, quoted by Syme, in a review in the *Archives internationales de laryngologie d'otologie et de rhinologie*, for January and February, 1911, suggests that simple hypertrophy may not be pathologic. Consequently it must not be so declared on sight. The Syme test of adjacent adenoid enlargement may be used to differentiate. Simple tonsillar hypertrophy means merely a *resistance to something*.

When the tonsillar parenchyma becomes truly diseased we must establish the possibility of systemic reaction. Wright shows that in 72 per cent. of clinical tuberculosis of the amygdala the specific microorganism can be recovered.

If we are asked how systemic and mental reflexes arise, there is the question of reaction to some antigen in a broken link of the defensive chain. We have to deal with a localized or focalized process not under control. So that the general symptoms supervene through connective tissue changes. For the parenchyma is not metastatic. Pressure upon neighboring bloodstreams and diversion of the metabolic current is less probable than vitiation of that current. What effect upon such focal infections a proper vaccine might exert is still to be worked out. It is not impossible that careful treatment by bacterial vaccines may solve the problem of chronic amygdalitis, and enable us to retain an organ-twin which may perform valuable functions in the œconomy.

Aneurism of the Thoracic Aorta.—Syphilis and alcoholism appear to be the chief predisposing causes; the exciting causes are general weakness of the media of the entire wall by arteriosclerosis, with increased arterial pressure due to hard work or sudden exertion. An embolus, or pyogenic bacteria, may be causative. The symptoms vary with the size, direction and location of growth. There is pain, severe, lancinating, often paroxysmal, most marked when erosion of bone occurs; cough, due to pressure on bronchi or trachea or to bronchitis; it is brassy, if there is paralysis of the left vocal cord by pressure upon the recurrent laryngeal, which also causes hoarseness; hemorrhage, due to pulmonary congestion, bronchial compression, or rupture of the sac; the last may cause sudden death, though the sudden bleeding may be concealed in the œsophagus or the thoracic cavities: Dysphagia, from compression of the œsophagus: Dilation of superficial veins, from pressure on the great veins: Dilation of one pupil, sometimes unilateral pallor or flushing and sweating of the face. Symptoms predominate in aneurism of the transverse portion; physical signs for the ascending aorta.

Physical signs: On inspection we find pulsation in the first and second right or left interspaces near the sternum or in the superasternal notch; sometimes a perforating aneurism is seen as a thin-walled tumor near the upper sternal region. Palpation evidences an apex beat displaced downward to the left, heaving impulse diastolic shock over the sac, sometimes a systolic thrill; there may be tracheal tug. Pulse may be small, delayed, or unequal in size in the radials; there may be no femoral pulse with large thoracic aneurism. On percussion: if the aneurism is pressing against the chest-wall we shall have an area of flatness and increased resistance over the upper sternum, or at one side of it. On auscultation a systolic murmur transmitted along the vessels may be heard; sometimes a diastolic murmur of aortic insufficiency if the first portion of the arch is involved. The aortic second sound is accentuated. The X-ray will show shadow of the dilated aorta, sometimes pulsating. To diagnose the site of the aneurism: The ascending portion presents pain, pulsation, dulness and X-ray shadow in the neighborhood of the second right interspace, near the sternum. The transverse portion presents pressure symptoms (inequality of pupils), tracheal tug, paralysis of vocal cord, cough, X-ray shadow and sometimes dulness in the manubrial region. The descending aorta presents pain in the back, radiating along the intercostal nerves or downward: sometimes dulness or pulsation in or below the left scapular region.

The differential diagnosis: (a) From aortic pulsation due to aortic insufficiency; the latter usually causes dilation of the aorta, which often leads to relative insufficiency of the valve. (b) From pulsating empyema, in which there are no diastolic shock, a different history and perhaps pus (ascertained by the use of a small aspirating needle, (c) from mediastinal tumors, in which pulsation is not expansile, diastolic shock is absent, aortic second sound is not accentuated, tracheal tug less common and perhaps cachexia; the X-ray shadow may assist. (d) Dislocation of the heart in spinal curvature, retraction of the right lung and sometimes displacement of the heart to the right in interstitial pneumonia may cause pulsation, dulness and loud aortic second sound in the upper right spaces near the sternum. We differentiate also by the history and other signs. The prognosis is always serious: spontaneous cure may occur or life may be prolonged for years, but sudden death may supervene at any time.

As to treatment: If seen early absolute rest, restriction of fluids; avoidance of excitement and worry, stimulants, exertion and straining at stool. Potassium iodide, gr. x-xx tid. Electrolysis and insertion of wire occasionally gives good results with sacculated aneurysm. For pain, potassium iodide and morphine, if needed; for dyspnœa with cyanosis due to pressure on veins, venesection; for bilateral abductor paralysis tracheotomy; for protruding aneurism ice bag or elastic bandage .

UPON THE MUSCLE-SENSE ELEMENT IN THE PSYCHOLOGY OF LITERATURE.

At the risk of seeming to parallel Berenson, in whose art-criticism we find the theory of tactile values in depicture, especially in art and the art of painting, let us offer, by analogy, and contrast, the theory of psychomotor values in the choice of sounds as words.

Schlegel, in his History of Literature, dedicated to Prince Metternich, ventures to attribute to the Hebrew language what he terms the divine afflatus, because the consonants which it employs are aspirated, or breathed. He explains that consonants are the body-

structure of a language, and its vowels are the music, the beauty, the soul.

Greek, Persian, and Teuton idioms are those, he adds, of the consonant, while Italian is given the compliment of exhibiting the character of soul.

Aspirating a consonant, as in Hebrew, renders it most suitable to express divine revelation. How the Greek aspirates have aided in telling the message of the New Testament, Schlegel does not say.

This is all quite 1830, and indeed out-of-date.

But within it lies the germ of truth. (Rosetti should be near.) For in each word we struggle with motor values which embody muscular efforts and which have been associated with our idioms from time beyond telling.

The thought of labials is one of approach, because it requires the lip movements to produce them. The dentals are indicative and distinctive and analytic, because the teeth are used to chew and to express emotions of a certain rank. (E. g., to show one's teeth, means and offers an emotion which is not self-conciously constructed, but instinctive.)

The gutterals, in part, are deeper, and are physically emotional, because even those beings which have no teeth can utter throaty sounds to convey meanings.

Upon the vowels some difference of opinion may arise. But, unlike the consonants, which are momentary and disjunct, the vowels are prolongable and sustaining. So that what we say, is spread upon the fluid of breathing or vowels, in the current of which is reflected our images of form and color.

A writer in the *Monist* (1906) has pointed out the emotional values of a laugh: as, *hah, hah; hee, hee; ho, ho; hoo, hoo; hay, hay; high, high;* etc., varying the inflection.

We distinguish in the *hah, hah,* a breadth of character, or nobility, not evident in the *hee, hee,* or *tee, tee,* which minimizes, not alone the thing ridiculed, but the person laughing.

Herein falls the notion of consonantal variation; for *hee, hee,* is not the same emotional weight as *tee, tee!* a *titter* is not a *giggle.* The *t* in titter is different in motor sense, or value, from the *g* in giggle.

But you say, titter and giggle are English, and emotions are not similarly expressed in German, or in French, for Example.

Let us see. To titter in French has no word; they say it, to laugh from the tip of the lips; *rire du bout des lèvres.*

Giggle is *ricaner,* in which the *c* is a gutteral, as the *g* is in giggle.

In German, titter and giggle and chuckle are all *kichern,* which is strongly gutteral. But titter is not truly so rendered.

In Italian to titter is to laugh under the moustachios: *ridere sotto i baffi*—no authentic single term, only one localizing it.

To giggle is *sogghinare* (g hard), and to grin is *ghinare;* these preserve the harmony of gutterals.

Grimm, in his philologic studies, always expresses the idea that similarity of sound is a safer clue to derivation than similarity of spelling. (What would he have said to the exponents of classic spelling who demand all letters to be included for the honor of the altars of etymology!) He identifies consonantal groups.

What, then, is the true manner of this persistence of force, etymologically and philologically? Only, as shown in the emotional value of psychomotor elements, that the muscle sense of word-production does enter into their literal significance.

Pneumonia.—The present status of this disease is discussed by H. S. Beck (Interstate Medical Journal, March, 1911), who quotes from Watson's "Practice" in 1845: "The great instruments to be employed in the treatment of inflammation of the lungs are bloodletting, tartarized antimony and mercury; of these bloodletting is the chief." This is to us an obsolete practice; yet it is doubtful if the results to-day are better than they were when every pneumonia patient was bled.

Prophylaxis is essential to a rational therapy; for the nature of the disease is infectious. Isolation of the patient will oftentimes protect the as yet unaffected members of a family, and should be a measure of general adoption. The expectoration and the nasal discharges should be as thoroughly disinfected as tuberculous sputum. Bad mouth conditions also favor the development of pneumonia by paving the way for pneumococcus sinusitis, which frequently antedates a true pneumococcus infection. Any inflammation of the nasal sinuses should be promptly treated. As sunshine and fresh air are inimical to the organism, living apartments should be both well lighted and well aired. The ideal treatment for pneumonia would be a protective serum, but thus far no very satisfactory results have been obtained; the same may be said of vaccines, leucocytic extracts and so forth. Until some specific agent is discovered we must content ourselves with the knowledge that three-fourths of all cases of pneumonia recover without treatment, and that too-vigorous treatment may actually be harmful. The general management should be much the same as in typhoid. Frequent examinations of the chest in severe cases should be avoided, as they tend to overtax the strength of the patient, and may result seriously; fortunately the general symptoms will disclose the indications that are to be met. The diet should be light, with plenty of fluids (water, albumin, milk, lemonade, strained cereals), eggs and the like. Measures intended to abort are of doubtful value; early bleeding is now rarely resorted to; tartar emetic has been practically abandoned; some clinicians still use veratrum viride; large doses of digitalis are highly recommended.

Severe pain is best controlled by hypodermics of small doses of morphine; but this drug should not be used at or near the critical period. Mild pain may be controlled by Dover's powder. Locally the ice-bag frequently gives relief. Hot applications may be employed; but they are generally not as efficacious as the cold. Blistering is to be avoided. Delirium may be due to toxemia, fever, inanition or impaired circulation, and meningitis. The treatment naturally depends upon the cause: toxemia requires tepid baths and ice-caps; high temperature cold baths and ice-caps; inanition with deficient circulation requires stimulants (strychnine, alcohol and camphor); a complicating meningitis is practically hopeless, though temporary relief may be obtained by lumbar puncture. Hydrochlorate of quinine is recommended (5 to 10 grain doses) for mild delirium. Sleep is essential for pneumonia sufferers; lack of it aggravates circulatory or nervous disturbances; here trional, veronal, morphine

are indicated. Fever ordinarily requires no treatment; hyperpyrexia especially with delirium may require quinine hydrochlorate in 5 to 10 gr. doses. Phenacetin, antipyrin and pyramidon may be of service combined with caffeine. The best anti-pyretic treatment is cold applied to the chest (bath, cold pack, ice compresses). Hydrotherapeusis are more valuable in controlling the functions of the heart, nervous system, respiration and in inducing elimination than in temperature reduction. In toxemia a tepid bath is more efficacious than a cold bath.

Cold Storage Limitation. — The State Assembly has passed by a vote of 101 to 35, the Brennan bill, limiting the time of cold storage of any food product to six months, unless extended by the Commissioner of Health.

The practical results of cold storage, thus far, have been disappointing to all but the shrewdest forecasters of business development. On the face of the matter, it seemed that a practical means of avoiding enormous losses of perishable food stuffs would not only render them more abundant and cheaper but more wholesome. On the contrary, cold storage has been manipulated so as to corner the market on all sorts of commodities and the result has been a general rise on retail prices and the almost inevitable use of stale, poorly flavored, tainted or even partially decomposed foods.

Cold storage should be allowed to the extent of preventing the alternative of loss by decomposition or sale at a sacrifice, of enabling perishable products to be handled in quantities economically sufficient, of equalizing fluctuations in price due to inadequate supply or glutting of local markets, day by day, and of lengthening the season at which any single product is normally available.

The present bill seems to us a fair compromise for perishable products in general, although we are inclined to think that, subsequently, it will require modification based on careful hygienic and economic study.

Such study, for instance, must inquire into the value of each particular food; its keeping capacity, without and with cold storage; the degree to which other similar food stuffs can fill its place; the normal yield of the substance by annual crops or otherwise; the seasonal fluctuations of yield of food stuffs produced the year around; the availability of a supply from different climates with due regard to cost and time of transportation; the competitive value of dried, canned and otherwise preserved foods; possible conflict with game laws.

It is often stated as an axiom that the ideal is to have available, any fresh food, at a uniform and fairly low price, at all times. But a little consideration will show that this is by no means necessarily true and, in particular, not of foods to which cold storage is applicable. With few exceptions, foods are mutually interchangeable in groups of varying number and they are not only better relished but the nutrition of the body is better assured if variety is forced upon us by seasonal flucuations. Comparatively few persons would wish the seasons of abundance of the small fruits prolonged. They become tired of one at about the time another comes into market. Domestic methods of preservation allow the same fruits to be used in modified and, except for strawberries, rather improved flavor during the winter, when large fruits are available. It is, of course, inevitable that the pesonal equation should enter into any such statement, yet the general fact remains that it is improbable that cold storage will ever be used on a large scale for the farious berries as the small demand for them out of season will be mainly met by recourse to fresh fruit from southern markets.

It has thus far been found impossible to preserve apples in cold storage and to deliver them with unimpaired flavor. While there is less gross decay in cold storage than by the old-fashioned cellar storage, apples released from refrigeration rapidly shrivel and rot and the ultimate loss is not much different. While the market increase in price of apples in recent years may be due in part to manipulation of stored supplies, it is largely due to neglect of orchards and even to failure to market the crops.

The problem in regard to meat and eggs, butter, cheese, etc., is very different from that regarding fruits and vegetables, on account of the much higher danger of toxic substances arising in animal foods, as well as the fact that we have to deal not with definite crops but with fluctuations in supply due largely to exposure to cold, increased cost of food for stock, etc.

While there is reason to expect much hygienic and economic improvement from the six months storage law, and while we believe that it would be unwise to delay its effect by waiting for an elaborate study of details, it should be clearly recognized that it is merely the foundation for subsequent legislation of a much more discriminating character.

The Invectivity of Typhoid Fever. — A Harris (Lancet, March 11, 1911) made cultures of the stools of 27 patients during the convalescent stage, after the temperature had reached normal. Where there were positive results weekly examinations were made until a negative result was obtained. No generalizations or conclusions could be made from the findings, except that the persistence of infection bears no relation to clinical signs. A patient who showed typhoid bacilli in the stools 78 days after the temperature was normal, had a mild case with little diarrhœa. Carriers do not have such a marked influence on the spread of the disease as might be thought possible, because "return" cases of typhoid are very rare; and as most hospitals discharge their patients without a bacteriological examination of the stools a fair proportion must be sent home with typhoid bacilli still present in the intestines.

The Backs of School Boys.—Dr. C. K. Taylor (The Psychological Clinic) states that if boys at their desks in school were stripped to the waist their spines might be seen to be "continually bent from their normal curvatures." While they are growing three or four inches in height within a year, their desks are not adjusted to the size of the occupants. There should be examinations at least twice a year by the family phvsician, so that incipient maladjustments may be detected and cured in the beginning.

Chronic Traumatic Mastitis.—G. L. Cheatle (Brit. Med Jour., March 4, 1911) ascribes as the main cause the corset which has not been made on hygienic principles. Some patients realize that the corsets are at fault, and come to the physician with the bones and steels broken or removed; or they have already adopted a form of corset designed to remedy the condition, after having consulted a corset maker.

MISCELLANY

Cocaine Abuse.—Hampton's Magazine for May, contains an article on this subject, showing the alarming increase which is startling! It should be reprinted and sent broadcast!

Epidemic Poliomyelitis (says Dr. W. S. Bryant) is a contagious and infectious disease. It enters the system by means of the nasopharynx. The disease proper, in contradistinction to the sequelæ, is amenable to local pharyngeal treatment. Prophylaxis is attained by nasopharyngeal hygiene. In times of epidemic poliomyelitis all cases of nasopharyngitis should be regarded with suspicion; they should be treated promptly.

Camphor in Pneumonia.—L. Weber (N. Y. Med. Rec., Jan. , 1911), in a desperate case of pneumonia, used hypodermic injections of comphorated oil. One drachm of a perfectly prepared solution (20 per cent. camphor in oil of sweeet almonds) was injected into the outer circumference of the thighs every hour for eight doses. This was repeated on the three succeeding davs; thus in four days 120 grains of camphor was injected. Recovery followed, due, perhaps, to the camphor.

Whether the Hunger Sense has its seat in the stomach, and thirst in the throat, has been the subject of much scientific controversy. The Italian physician Valenti puts the seat of both these emotions in the gullet; he found that a cocaine injection in the œsophagus resulted in immediate suppression of the feeling of both hunger and thirst. Savages have long known that the chewing of coca leaves renders the gullet insensitive and destroys any desire for food or drink.

Inoculated butter has cultures of beneficient bacteria introduced into it to keep it from turning rancid; the part hitherto played by boric acid in butter may henceforth, it is said, be played by the active microbe. These are sold in the form of a clean liquid, which is added to buttermilk. One gallon of the buttermilk thus prepared is added to every twenty gallons of cream in a butter-churn; the remainder of the butter-making process goes on in the usual way.

The Water Cure for Typhoid Cases.—A colleague from California is moved to write that, having had great success for a number of years in the treatment of this disease, he insists upon the patient drinking a cup of water every ten minutes for several days; "this will cause profuse perspiration and heal up the fever in four or five days, without any undue action of the kidneys." A cup of water every ten minutes would, on a modest computation, be twenty-four quarts a day; this sounds like one of those Philippine tortures.

An Instantaneous Cure.—A Montclair, New Jersey, housewife went to the back door of her home in answer to a knock and found a suspicious-looking character apparently supported on but one leg. A ferocious bulldog domesticated in that family becoming inquisitive, the apparently one-legged man dropped his crutch, released another leg which had somehow been made temporarily inconspicuous, and sprinted away at an amazing gait.

Prof. Irving Fisher, of Yale University, is explaining in the press how most people can add fifteen years to the "expected length of their lives. He offers in himself an excellent demonstration, since his own valuable life has been prolonged at least fifteen years beyond the expectation of the examiners who had assured him he would surely and in brief season die of consumption.

"They also serve who only stand and wait," wrote Blind Milton most patiently two hundred and fifty years ago; but this need not be the attitude of the blind today. In the metropolis there are now three thousand sightless persons; and they are greatly helped in Lighthouse No. 1, which is the headquarters of the New York Association for the Blind. Here blind men and women are taught, are aided intelligently to develop their talents and to achieve "Light through work." The blind are thus no longer helpless and hopeless, but are taught stenography, telephone operating, weaving, broom-making, basketry and many other activities of everyday life.

Highly flavored Cheeses, including the cold storage kinds and the newer green cheeses, have been grossly maligned, in the opinion of Assistant Dairyman C. F. Doane, at Washington; the American or Cheddar cheeses, cottage, skim milk, Roquefort, Camembert and Swiss cheeses are all "very digestible," when made a chief part of the daily rations. The difference between the new and the old cheeses is negligible. The use of cheese by Americans as a relish and flavoring ingredient is handicapped by the fact that they are unacquainted with the kinds that the Italians, Swiss and Germans sprinkle as freely upon their vegetable concoctions. "People who like a highly flavored cheese never become tired of it;" but how about their neighbors?

The Barber's Razor.—A recent case of death from œdema of the glottis, the causation of which was suggested (though by no means proved) to have come from a barber's razor, nevertheless prompts the observation that under the microscope the sharpest razor is seen to be rough and jagged, with interstices in which bacteriologists have discovered such germs as float in the air and lodge upon hands and clothing. Inasmuch as the barber's razor oftentimes removes cuticle with hair, and sometimes, indeed, bites into the derma, it is likely that the instrument may thus be the means of conveying distinctly pathogenic bacteria. However, lather is a disinfectant; and every conscientious barber employs other antiseptic agents than soap and water, keeping a clean instrument which he sterilizes after use. It is well to know this barber.

Fat Digestion in Infancy.—F. B. Talbot (Am. Jour. Dis. Children, March, 1911) finds that large amounts of fat can do a great deal of harm to most babies, such as come under two classes—those which have a normal digestion and are unable to digest excessive amount of fat, and those which have diminished powers of digestion. and are unable to digest normal amounts of fat. Most (though not all) babies can digest fat within reasonable limits. We may increase the percentage of fat gradually up to 4 per cent. in most normal babies, whose digestive powers have not previously been lowered by crass errors in feeding or by infection. These children develop normally without any of the signs or symptoms of fat indigestion, so long as their hygiene is perfect and they have no intercurrent infection.

ETIOLOGY AND TREATMENT OF CHOREA IN CHILDREN.*

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THEORIES do not always make possibilities, they may, however, more likely make probabilities. The etiology of chorea is still wrapped in mystery, and its treatment at present more or less empiric. Theories assail us from all sides: the rheumatic, fostered by such men as Wollenberg and Mackenzie; the post-infectious, that type of chorea following scarlet fever, diphtheria, pertussis, typhoid, pneumonia, German measles, septicæmia, measles, varicella, gonorrhœa and others; an intestinal parasitic cause, a reflex, an infection through a special virus, and a condition of capillary embolism in the brain. Furthermore, Foerster considers chorea to be a lesion in the brain particularly of the cerebellum and of the superior peduncles, succeeding which the cerebrum is involved. The cerebellum serving of course as the co-ordination point of the various muscle groups. The cerebellum may be so severely lesioned that the condition of the inferior peduncles may be overshadowed. Gower and Bonhoeffer believe that there exists a tumor of the superior peduncles but do not go far enough to account for the physical disturbances of the cerebrum; in fact the whole nervous system is involved without an adequate explanation. We are persistently in doubt as to the pathological anatomical substratum of chorea. Siegert believes the conditions of the brain result from capillary emboli following an endocarditis as their base. Henock also favored this theory twenty-five years ago in spite of the fact that emboli were not found after death. Leube and Möbius believe chorea to be a special and separate disease and infection. Koch that it results from a particular virus. Pianese found trouble when he certified that he had found the specific germ. Assuredly, however, before considering a particular micro-organism we must not lightly overlook the invasion of the present well known varieties of bacteria such as the strepto-staphylo and diplococci as seen easily grown from cases of polyarthritis, scarlatinas, gonorrhœas and the like.

The rheumatic theory will not easily down. Its worshippers are many, seemingly forgetting the fact that the word rheumatism is symbolic for a multitude of conditions and causes, some mild, some severe, and each having its own particular causation. They point out the close relationship between rheumatism, chorea, arthritis and endocarditis, but are not agreed as to the exact relationship between these forms, some believing that the endocarditis rather than the arthritis is the important predisposing factor; while others, as Cheadle, says Rachford, believe that arthritis, endocarditis and chorea are the result of rheumatism. Careful observers report that they have seen chorea follow or precede the arthritis and endocarditis. Rachford believes that rheumatism is a poison which may produce chorea by action on the nervous system, and endocarditis, peri and myocarditis from action on the heart, and considers rheumatism a poison, for he furthermore says that chorea is produced by a number of organic lesions of the nervous system and by the bacteria or toxins of certain acute infections, as well as by nutritional changes and functional derangement of the central cortex. Sachs says that the tendency of the present day appears to regard chorea as due primarily to vascular changes and such changes are due to infection, and I believe personally that chorea is from a toxic disturbance in the cerebrum and cerebellum as well as involving the superior peduncles through microbes which also cause polyarthritis and endocarditis. With the gradual growth of the brain and the unfolding of the sensitive nervous system almost any poison can cause conditions seen in chorea.

Swift condemns the word chorea as symbolic for a condition and not for a disease, and says that the muscular inco-ordination is due to faulty nutrition or lost action of the motor control cells as arising from their poisoning, or due to their exhaustion by over-action. Poisons, come from where they will, weaken the child and thereby the control. Such movements as those of chorea are indeed a symptom of the underlying cause, such cause being a condition, infection or disease which will bring about a disability, a malnutrition of motor control cells.

Not all cases are due to the same cause. Of causative factors we have many; climatic changes favor rheumatism as seen in the temperate zone. Georg Mayer and Kaiser report that physicians in the Antilles found none. Gallinek finds no chorea in the Tropics, the exception being Madagascar; it is moreover found very seldom in Egypt and India and only seldom in Southern Europe. Eichhorst also favors temperature and weather conditions as a factor in the causation of chorea. Chorea is frequent in Europe and along the coasts of the United States. Wicke believes that lack of exercise and fresh air, unfit food, improper housing and damp unwholesome houses are the exciting cause. In Paris, curiously, chorea is limited to certain streets and locations. In the United States it is frequently limited to the months of March, May and June.

In despair as to its exact causation we turn to morbid anatomy and pathology for relief. Again we wallow in a slough of despond and find nothing positive from among the findings of many. Sée, in sixteen post mortem cases, found no lesion in the central nervous system; in thirty-two other cases there were lesions in the brain and nerve centers, in others congestion of the serous membranes.

Ogle, Pye-Smith and others refer to a hyperæmia of the brain and cord. Meynert and Elischer found hyaline degeneration in the nerve cells of the central ganglia and also changes in the vessels of these same ganglia as well as extravasation of blood into the connective tissue of the brain. These investigators moreover also found numerous emboli in the smallest vessels of the cortex. Flechsig found hyaline changes in the anterior divisions of the lenticular nucleus. Dana found general hyperæmia of the brain and a degeneration of the walls of the blood vessels, and in the white substance of the brain, a considerable perivascular exudation with an accumulation of leucocytes. Hughlings-Jackson, as Siegert, insists upon the embolic origin, but frankly admits finding no such emboli after death. Lockhart-Clarke found changes in the nerve elements and in the connective tissue of the spinal cord. Garrod speaks of an overgrowth of connective tissue in the nerve centres.

Other investigators, because the condition refers to

*Read before the East Side Physicians' Association, December 1, 1910.

the cortex of the brain, consider a relationship to epilepsy.

The Russian Preobozenski, from an infection chorea, was able to get cultures of streptococci from the blood, and after death from the viscera and from different parts of the central nervous system in a patient dying of a choreic disorder.

Naunyn found progressive micro-organisms in the inflammatory deposits of the mitral valve and in the pia. Steinkopf found various bacilli in the spleen, heart and brain. Rachmaninow reported two fatal cases of infection or toxic chorea in girls of twelve years, due to some general infection, the bacteriological proof being however wanting. Heubner cultured streptococci and staphylococci from the blood of a choreic patient and subsequently inoculating mice, developed in them a septicæmia. Cramer and Toebben also demonstrated bacteria.

It is undeniable, therefore, that a good classification of chorea in children is at present impossible. This is at present greatly due to a misconception of the term rheumatism, of the causation of endocarditis, pericarditis, infection choreas, etc., and the relationship of rheumatism, intoxications, poisons and the like, to chorea. Many men, many minds. My own classification is as follows:

Chorea minor, the most characteristic and observable of the choreas of children known for many centuries but best described by Sydenham, may be subdivided into (a) a simple form, and (b) a severe one. Still subdividing, the simple form may be again subdivided into hereditary and acquired.

Under the simple form I place choreas not complicated with heart or joint affections.

The hereditary type, a simple form is seen late in infancy and has as its etiology an undoubted hereditary taint from a neurotic choreic malnurtured or alcoholic parent or parents. This condition must not be confused with chorea major, a form not seen in children, or with chorea gravidorum, a prenatal condition grave for both mother and child, or with Huntington's chronic progressive chorea seen in certain families.

Another type of chorea, that of the post-hemiplegic dependent upon organic changes in the brain and seen at times in older children, need bother us no further.

Under the acquired subdivision we find such choreas as habit, hemi, laryngeal, mild hysterical, functional, exhaustive, pseudohemiplegic, reflex, autointoxic, from anæmia and from chlorosis.

The severe type of chorea minor is seen in cases of rheumatism, endocarditis, arthritis and polyarthritis. Such a condition may succeed the simple form or may arise primarily.

Toxic chorea, by many placed as a separate heading, by me believed rightly to be placed under severe chorea minor, is a most important type. It is seen during or succeeding infectious diseases.

Lastly chorea insaniens, a progressive type of chorea developing into true melancholia and mania arising from severe chorea and fortunately rarely seen.

I beg your indulgence if out of the number of opinions advanced as to the etiology, I try to bring reason and common sense out of the chaos and outline a course of treatment.

Undoubtedly in a small number of cases there appears a hereditary taint. The mother's milk changes under certain conditions more readily than seen in normal women. The infant does not thrive, is under weight, a pseudo muscular hypertrophy takes place, a diminution of normal vitality. If bottle-fed the condition is accentuated. The mother should be placed under normal, hygienic surroundings, the infant scientifically bottle-fed and nourished. Cod liver oil and iron for the mother should not be stinted. Later in our clinics and hospitals we see the usual type of chorea, peculiarly more frequent in girls than in boys. The former being also more resistant to the treatment.

It is to be remembered that the developing brain and nervous system of the child is influenced greatly by intoxications within the body itself. Inco-ordinated muscular movements easily arise from an oversensitive brain. Fundamentally, therefore, I believe malnutrition back of all cases of chorea both simple and severe, born or acquired, in consequence bacteria and their toxins both from within and from without the body disturb the histological normality. Choreic children present a chalky, anæmic appearance, furred tongue, constipation, meteorism, dry skin, dull eye, loss of flesh and subcutaneous fat. Gas is found in the large and small intestines and at times there is a disturbance of the stomach. The urine is cloudy and loaded with urates and phosphates. The pharyngeal mucous membrane is seen to be dull and dripping more or less with thick mucus or muco-pus. A history of malnutrition is easily elicited.

Unhygienic, dirty surroundings, cheap food illy prepared, and hastily eaten, excess of proteids, closed, unsunlit rooms, forced early in life to school and pushed beyond their mental capacity, lacking fresh air, bathing and sufficient exercise, our patients present a common picture. Also from overtaxing a sensitive nervous mechanism, We find, moreover, fright, school strain, worms, severe punishment, delayed menstruation, adenoids, hypertrophied tonsils, phimosis, masturbation and decayed teeth attributing to the development of chorea.

For all subdivisions of chorea minor and for toxic chorea the beginning of my treatment is the same. The simplest of diets. Raw, warm, pure milk, stale bread and fruit stewed for hours and sweetened to the taste at regular four hour intervals. Bathing the whole body at first with lukewarm water at about 75° F., the water daily made colder until a temperature of about 60° F. is reached, the body of the patient to be rubbed well until the skin glows. The patient sleeps alone, windows open but no draughts. Rest, and plenty of it, must be insisted upon, a long night's rest and rest for one or two hours morning and afternoon besides. Excitement, as play or severe exercise and undue exposure, should be guarded against. Light food must be kept up until a feeling of hunger returns. Farina, rice, oatmeal, soups, eggs, fish, a small amount of meat, easily digested vegetables, can be gradually added to the diet. Laxatives like mist. Rheiet Sodæ and castor oil must be given from the first. Strange to say these simple types are often very resistant to treatment.

Certain patients respond to moderate, short continued doses of the salicylates, sodium salicylate being preferable, others are absolutely unaffected. Bromides I consider of temporary and of little value. They upset the stomach in even small repeated doses, cause indigestion and loss of appetite besides, in susceptible patients causing acne, pustules, and large flattened

oily raised papules and bromic blotches on the body.

Arsenic is in my experience a much overrated drug in chorea. Certain authorities advise ascending doses until puffiness under the eyes appears and albumin is persistently seen in the urine. I consider such doses to be empiric and harmful. Fowler's solution should be given in small doses and only for a very short period. Swift in fact has seen three cases of hemorrhage from the stomach and many cases of hemorrhage from the kidneys, and also inflammation from the conjunctivæ, and Koplik and Swift have observed arsenical neuritis following its use even in small repeated doses. In iron and in cod liver oil we have an ideal drug therapic if given conservatively even over long periods. Blaud's pills, and proprietary iron mixtures, have given me good results. Hemichorea, the pseudo and true paralytic types taxes the patience and skill of the physician. One case of mine, after patient treatment with no let-up of his inco-ordinated movements of the right hand and fingers, is doing fairly well in the mountains.

Habit chorea is in the later stage best treated through suggestion. Caillé mentions a case of R. Massalongo and U. Gasperini of an eleven year girl and a thirteen year boy who presented complete left-sided paralysis complicating chorea.

One of my own cases, a girl of seven years, has a partial right-sided pseudo paralysis with paræsthesia and loss of control of right arm and hand. These cases are usually of the simple variety.

The severe form of chorea minor complicating endocarditis, rheumatism and arthritis are cases hard to handle. The same simple well-cooked diet, rest, and a great deal of it, baths, both of pure water and of carbonic acid, and also sunlight, are imperative. The salicylates and Fowler's solution should be given very, very guardedly. Cod liver oil and iron must not be pushed. Strychnine and caffeine should be given early in the condition in small infrequent doses.

The initial stage of a toxic chorea as well as that of the simple and of the severe forms of chorea minor must be treated as that of a chorea minor succeeding which the vaccines of typhoid, gonorrhœa, pneumococci, streptococci, staphylococci, etc., should be employed.

In the near future I prophesy these vaccines either from stock or autogenous will be given following a blood examination and cultures from infected joints will be made early in the condition, thereby nullifying, I hope, the pathological destruction, invalidism and death.

Finally in closing one word might be mentioned as to the futility of electricity. I believe in Punch's advice, "Don't." Erb, however, seemingly derived good results from the application of the weak galvanic current of ten milliampères to the nape of the neck over the motor areas as well as over the spine.

111 West 77th Street, New York.

Rosin Weed (Silphium Laciniatum).—The dyspnœa of tuberculosis, of asthma and of other grave pulmonary affections has in many cases in the experience of Dr. Beverly Robinson been markedly relieved by the following: ℞ Fl. ext. silph. laciniatum (root) ℥i; alcohol ℥iv; aquæ ℥ij. M. Filter, Sig. ℥ss—℥i as a dose.

THE HEALTH OF THE SCHOOL CHILD.*

BY JOHN B. HUBER, A.M., M.D.
Professor of Pulmonary Diseases, the Fordham University Medical School; Lecturer the New York State Department of Health; Visiting Physician to St. Joseph's Home for Consumptives, etc.

I HAVE a text for this address, although it is not a sermon (I could not for the life of me deliver one); and the text I have found in a paper by Mr. Henry M. Hyde, in the Saturday Evening Post, entitled *Making Over the Public School Child.* It is as follows:

"Behold now, standing alone on the tallest virgin peak of time, that immortal hero, little Johnny Jones. Mr. Jones has just had his fat, pink legs inserted for the first time into a real pair of pants. Thus accoutered in true manly fashion, J. Jones smiles confidently at the universe. The planets may now begin revolving to some purpose. Every little Johnny Jones is a new center of the solar system.

"'Heir of all the ages past' is Johnny, 'and hope of years to come.' He's the hero of every romance, the villain of every crime, both victor and vanquished in every battle. President, pickpocket, poet, spit-ball pitcher, pauper and predatory plute—call him all the names you please! His face still wears its inscrutable smile. He knows they are all true!

"J. Jones is the reason why father works overtime; why mother has last fall's walking skirt transformed into a hobble. The world is its debtor and all the rest of us toil endlessly in his service. When he goes out to play, new empires are in his service. When he stands up to speak a piece, unborn senates break into applause. The ghosts of Homer, Napoleon, Darwin, recognize in him their only rival. Look at him with awe; consider him with reverence; treat him with the profound respect that is his due! Tremble lest, through inadvertence or ignorance, you interfere with a destiny that all the generations of men have lived and died to make possible!

"It has taken a million years of struggle and suffering to bring little Johnny Jones into the world. Yet so fragile is this marvel that three short school terms may suffice to undo the work of the ages and transform a potential T. R. into a nervous, broken, sickly defective, a sullen and vicious degenerate or a pampered and inert mollycoddle—each almost equally a menace to the progress of the race."

So we are this evening concerned with the way in which the health of the school child, as represented by Little Johnny Jones and his sister Sue, is conserved in our public schools. When, a generation ago, it was sought to make school attendance compulsory, there were many who opposed legal enactment to this end as tending to paternalism in government and as being an outrageous infringment upon personal liberty and the rights of parents; to-day probably no one would be found to oppose compulsory school attendance. A further, and as it proves, an almost equally epochal step in government activities regarding schools, was taken some fifteen years ago, when physicians were engaged by the metropolitan Department of Health to visit schools in the early morning. Their duty then was only to inspect such children as were sent to them by the teachers, in order that cases of infectious dis-

*The substance of an address made under the auspices of the New York State Department of Health.

ease might be returned to their homes until the danger of their infecting other children had passed. Following upon this these medical school inspectors were engaged to devote practically their whole time to such work; they were to make physical examinations of school children after having, as before, excluded the cases of infection. Not only are they to detect possible cases of infection or contagion of any sort; but they now also undertake to discover defects of all kinds, quite apart from any consideration of infection. They seek untoward conditions of nutrition, the presence of enlarged cervical glands, chorea, cardiac lesions, pulmonary disease, deformities of the spine, chest or extremities, skin eruptions, defective vision or hearing, obstructed nasal breathing, defective teeth, deformed palate, adenoids, hypertrophied tonsils, and defective mentality. A card index is kept; and the parents are notified, and are advised to have their family physicians correct or at least treat the children for the defects noted; and if this cannot be afforded, that the children be sent to hospitals or dispensaries to this end. Next; in addition to medical school inspectors, nurses have been engaged to supplement their work. Children sent by the inspector, are treated by them, as directed for minor ailments; they attend only to those children whose parents cannot by reason either of poverty or ignorance, employ physicians or provide adequate treatment and nursing. Thus are relieved cases of pediculosis, ringworm, molluscum and conjunctivitis.

The system thus outlined has become amazingly widespread. In Boston a corps of medical school inspectors was appointed in 1906; a year after a law was enacted for the enlistment of trained nurses, who were to look after pupils, not only in school, but to ascertain also if the homes of these children were healthful. Chicago's Board of Education has a special division of child study for examining defects; both Chicago and Philadelphia have a private pathological clinic for children, "which takes up nervous difficulties and backwardness, that may be due to either hereditary troubles or deep-seated defects." In Louisiana and other states the Board of Health sends lecturers, who discuss school hygiene, tuberculosis, etc., before summer schools and in state institutions. In a number of cities the spread of hygienic knowledge is furthered by lectures illustrated with lantern slides.

The Bureau of Municipal Research in New York City has gathered an enormous collection of facts (which are at the disposal of all interested people) concerning the medical inspection of school children, not only in the United States but also in our Island possessions.

Only time forbids the setting forth of most suggestive dates from such regions as Hawaii and the Philippines, for example. One may learn, in these reports, how many cities and towns stand regarding medical school inspection for transmissible diseases; such lesions as have been enumerated, either mental or physical; the care of children inclined to tuberculosis; what cooperation there has been with dispensaries, hospitals, relief societies, the press, etc.; house to house instruction in prophylaxis; "follow up" work by nurses, with the distribution of cards of instruction; and much else. The general trend of opinion would seem to be that the ideal method of disease prevention and child hygiene should be by way of the parents calling in the family physician; that failing this the city must provide such means through the school or the health board.

It is, in any event, a truism that the welfare and the prosperity of any nation must depend upon the health and the stamina of its people; and such health and stamina are in turn conditioned upon the well-being of the nation's school children. Nor can it be doubted that the right period and place in which to detect and if possible to eradicate abnormalities and degeneracies in the coming citizen are in childhood and methodically, in the schools; such examinations are logically the province of Government.

Medical school inspections have given some really startling results. As for example: A Committee of Physical Welfare of School Children has found, among 1,400 children, 12 per cent suffering from malnutrition; 48.8 per cent. from enlarged glands; 74.4 per cent. from bad teeth; 14.4 per cent. from eye defects; 27.7 per cent. from nose troubles; 29.9 per cent. from throat troubles. These data, concerning 1,400 children taken at random from various parts of the metropolis, were considered to indicate that in the entire city forty-eight thousand children were suffering from malnutrition, 187,000 from enlarged glands, 230,800 from defective breathing—a total of 465,800. Should these percentages hold true for the rest of the country, there must, it is estimated, be some twelve million school children in these United States suffering from physical ailments. And upon the basis of these figures the following recommendations are made:

A thorough physical examination of all school children. Notification to all parents, followed when necessary by a second notice and visits to inform and to persuade parents to take proper action. The enforcement of existing laws and securing proper authority, where this is now lacking, to compel parents who refuse to take necessary steps. Periodic examination of school children during school life. Physical examination of children when applying for work certificates. Enforcement of health, tenement house, and child labor laws. The establishment, in connection with boards of education, of departments of school hygiene, whose duties shall be to see that school buildings are so constructed and so conducted that they cannot of themselves produce or aggravate physical defects, and that the school curriculum should be so devised and executed as neither to produce nor aggravate them; to study the effect of school environment — curriculum, building, home study, physical training, upon the child; and to teach hygiene, so the children will themselves cultivate habits of health and see clearly the relation of health and vitality to present happiness and future efficiency.

It is probable—so, at any rate, we would like to believe, that the figures here reproduced represent a position unduly extreme; if they are not exaggerated, the country is certainly in a very bad way indeed. With regard to some of our American communities we obviously have to make some allowance for the enthusiasm of the investigator. Indeed, taking our country by and large the ratio of abnormality in our school children has been found by various investigators to range between 7.7 and 71.7 per cent.; in one city eighty per cent. of defectives were found; in another out of five hundred children examined only one had

perfect teeth, and he, poor child, had by way of compensation, spinal caries! Nevertheless, it can hardly be gainsaid, that they suffice to warrant a universal system of medical school inspection, if not to justify all the recommendaations which the committee has based upon them. Not only should such inspections obtain in cities, towns and villages, but also in all other schools—private, parochial and the like. Even in "the little red school house" such inspection would, it seems, not be amiss, if we are to judge by the following statement by Mr. Allen: "Open mouths and closed minds clog the 'little red school house;' there headaches do not suggest eye-strain; there deafness and running ears are frankly attributed to scarlet fever, which everybody must have, with all the other 'catching' diseases, the earlier the better; there colds begin in December and run until March, to the serious injury of attendance and promotion records; there bone tuberculosis is called 'knee-trouble' or 'spine-trouble' in the family; there boys like my little friend Charles count the bottles of cod liver oil they take to cure adenoids that could be removed in two minutes, and fear 'I won't be strong, in spite of all the patent medicines I have taken.'"

So far as is possible—the abnormal child. It is certainly enlightened selfishness for any community to make the abnormal child healthy and intelligent if this is possible; for he becomes a voter and as much a power in politics as the sanest among his neighbors. It has been observed that he votes with greater regularity than the latter.

Thus, in New York City, in Chicago, Philadelphia, Boston and elsewhere, "ungraded classes" have been established for defective children. In these classes there is, of course, no routine curriculum; there can be no set rules for the training of children who are exceptions to the normal. In the old days no one made a scientific examination of a backward child. To-day if he is slow in reading he is referred to a medical inspector for an examination in refraction; if he looks up stupidly when asked a question it is ascertained if his sense of hearing is defective. The causes of a weak body, of a sluggish mind, are discovered, and if possible, removed. No tasks are given beyond the child's capacity; those backward in given subjects are put in a class by themselves and especially coached.

Oculist Wanted.—"Prominent . . . (name of city) Opticians offer permanent and desirable position to a registered physician. Must be a first-class experienced refractionist. Not required to do selling or adjusting of glasses. Address with particulars . . . ."

No, we are not quoting from a newspaper but from a medical journal which has taken a lofty stand with regard to charlatans of all sorts and which has pointed out that the eyes must be treated as organs of the body and not merely as optical apparatus. On this ground, it has opposed the recognition of optometrists. Also, it has had more or less to say about the dignity of medicine.

Somehow, a tame doctor, kept in the back room of a shop and put through his tricks with a box of lenses for the benefit of his master, goes against the grain of our professional prejudices. Moreover, we would rather have seen the advertisement in a newspaper than in the columns of a justly esteemed medical contemporary.

A STUDY OF MEASLES AND REPORT OF AN EPIDEMIC.*

By William P. Strain, M.D.
Pathologist to Miserecordia Hospital; Instructor Medicine and Pediatrist Fordham University Medical School; Assistant Instructor and Pediatrist New York and Bellevue Medical College.

My selection of this subject is largely due to the extent of the epidemic I have to report, and the importance of the disease from an institutional standpoint, in view of its severity, the number of complications and the high mortality.

Measles as a scourge or a disease of intense epidemic character is not liable to be appreciated by the review of individual cases, seen under good social and hygienic surroundings; but in institutions and amongst aborigines or large aggregations of people as in camps or barracks. Where there is a great facility for close and intimate contact, the rapid spread and severe complications of the disease are soon impressed.

To review the literature of huge epidemics which have occurred would be most impressive and instructive but the mention of a few epidemics will convey to you my point.

In the Fiji Islands one fifth of the entire population was killed by this infection. Vogel states that measles among the Esquimaux is as fatal as variola is amongst unvaccinated whites. It is also reported that during the war of the rebellion large epidemics frequently occurred and that in some, one case out of every five died of this disease.

The susceptibility and severity of this disease depends upon:—inherited resistance of the organism to the virus, the strength and character of the virus; the length of time since last appearance of the disease in the community or institution (as the number of immunes decreases the severity); the extent of the territory involved; the intimate contact of non-immunes; poor sanitary surroundings; crowding together of cases; and season.

The yearly curve of measles shows in New York City rise in February and March with a decided fall after July. In London the rise is in December and again in July. In Paris and Berlin the curve shows the greatest number of cases in June and July. In New York the disease shows decided increase in cases every two years with marked regularity, whereas scarlet fever shows every three years.

Ballard has suggested that a temperature above 60 degrees F. and below 40, influences the disease, but observations have not borne out his statement, as in Paris, Berlin and London the disease is very prevalent in the summer months with a mean temperature of 70 degrees F., though the mortality and severe complications have been more frequently noted in the cold months.

The malignancy of measles, according to Hirsch, is due largely to "accessory circumstances and not to any special quality of measles."

The improvement in diagnostic methods, notification of authorities, isolation of cases and increased knowledge of prophylaxis and treatment have done much to mitigate the disease and its complications.

The discovery of Koplik's and Filatow's spots has greatly facilitated our early recognition of the disease, thereby giving chance for earlier isolation of the case and less exposure to non-immunes.

*Read before the Celtic Medical Society, October 27, 1910.

The mortality amongst children in institutions is dependent upon the crowding of cases; insufficient amount of air per capita; the prevalence of intercurrent diseases; the poor constitution of children weakened by previous attacks of other severe diseases; the inherent weakness and diminished resistance of institutional inmates; the inability to give each case the individual attention it requires, and the lack of trained help.

It is a self-evident fact that measles is a factor to be reckoned with ininstitutions. Up to the present, the efforts to prevent spread of the disease availed us little; it seemed to be inhibited for a time, but once started spread like fire in dry grass.

The duration of the epidemic I am about to report occurred in the New York Foundling Hospital and lasted from February 10th to May 19th, 1908. The first attack occurred in an infant suffering from broncho-pneumonia, which had been returned from boarding three boarding three weeks previously. On February 8th, while convalescing from the above illness, the child became sleepy and looked ill. Koplik's spots were found and the child immediately was removed to quarantine.

Koplik's spots were assidiously looked for in all children in this ward (the ward being quarantined). Of six (6) children in the ward five developed the disease within two weeks. The disease next appeared in quarantine in children who were there for some other ailment.

On March 8th measles developed in a child who had been returned to a nursery from the floor on which the measles first appeared. He had been kept there for a period of 21 days, did not develop the disease and was considered safe to return. Five days later he came down with the disease; 26 days after exposure.

From this time various nurseries were affected almost simultaneously with the exception of one, which, strange to say, was a corridor nursery used as a passage to different parts of the house. This remained free during the whole epidemic.

After waiting 21 days from the occurrence of the last case, all nurseries were aired and fumigated; walls and beds were washed, scrubbed and cleaned with bichloride; blankets were boiled and mattresses aired and steamed; all old clothing was fumigated or destroyed. The last case occurred on May 19th, 1908, ninety-nine days after the appearance of the first case.

Etiology:—The average age of the children in the New York Foundling Hospital is from six months to four years. The age of children in the nurseries is one month to two and a half years.

One case occurred in an infant aged two months, and one in an adult aged 24 years. There were ten cases under six months, 89 under one year, 43 from one to two years, 37 from two to three years; six from three to four years.

Sex:—Males, 102; females, 110. From this it is apparent that sex had no influence on infection.

The season was winter, this may account for some increase in the number of complications.

The transmission of the disease was very hard to follow. Direct contact was shown in the first six cases. The occurrence of the disease in quarantine where one case was sent also shows its intense contageousness. It must also have been carried by means of a third person, as the infection broke out all over the house. As insects and mosquitoes can be eliminated at this time of year, it seems as if a human agent must have been the carrier. If not that then aerial transmission remains.

The incubation period as far as it could be traced, appeared to be from ten to fourteen days, the longest period being twenty-six days..

Mode of Onset:—The majority of cases were taken ill with drowsiness, coryza, blepharitis and a sharp rise of temperature. Koplik's spots would be noted and later a small punctate rash on the soft palate and injection of the mucous membrane of the cheeks. The temperature usually rose from one to five days before the appearance of the rash; prostration and a generally sick look marked the child.

In some children vomiting would be persistent, with no signs of gastric catarrh.

Capillary bronchitis ushered in the disease in two casses.

Acute otitis media appeared at the onset. In one case two days before the appearance of Koplik's spots; the opening in the drum became occlued and had to be reopened on the fourth day of the disease; two cases occurred before the appearance of the rash but after the appearance of Koplik's spots, one case was coincident with the rash.

In some cases the symptoms were those of broncho-pneumonia.

Convulsions at onset marked one case.

In some instances measles and scarlet fever occurred in combination. The symptoms of scarlet fever appeared first and two to twenty days later there was measles with typical rash and distribution.

SYMPTOMS.

Koplik's spots appeared as follows:

First day with rash, 104 cases; two days before the rash, 51 cases; three days before the rash, 34 cases; four days before the rash, 6 cases; five days before the rash, 1 case.

Koplik's spots were absent or not noted in sixteen instances, but appeared in 92.4 per cent. of the 212 cases.

RASH.

The duration of the rash was noted in 149 cases, as follows:

Two days, 3 cases; three days, 16 cases; four days, 41 cases; five days, 44 cases; six days, 25 cases; seven days, 11 cases; eight days, 7 cases; ten days, 1 case; eleven days, 1 case.

So that the average duration was from three to seven days in 137 cases.

By this is meant a cleanskin with no stain remaining.

The rash always faded in the order of its appearance, face first and extremities last.

The rash was noted many times, although I have not the exact number, to appear on the soft palate as small purplish spots on the inflamed and reddened mucous membrane and seemed to lie beneath it. The constancy of these spots on the palate was not near so marked as Koplik's. The eruption of the spots was noted before the rash.

In one case Koplik's spots were present followed next day by a rash which lasted about 12 to 14 hours, then was followed four days later—five days after Koplik's—by a typical measles eruption lasting five days.

In one case, Koplik's spots were present and at the same time a scarlet uniform rash, followed in one day

by the lesions of varicella, and on the fourth day by typical measles with the usual distribution and lasting five days. .

The rash was hemorrhagic over the whole body in seventeen cases. These cases presented no signs of hemorrhage from the mucous membranes of the mouth, stomach or intestines and the severity of the disease or its course were not influenced by this symptom.

The rash of scarlet fever and measles co-existed in two cases.

Gastro-Internal Tract:—Acute vomiting as stated under onset occurred in one case.

Parotitis:—Double, non-suppurative, one female aet two years, appeared on the ninth day, lasted five days, made no apparent change in the course; was obviously not contageous as no other children in that ward (30 in number) contracted the disease.

Suppurative parotitis, one case: female aet 8 mos., 17th day of disease.

Diphtheroid ulceration of the lips: one case, female aet two years, developed on the 5th day. The membrane covered both lips grey-green in color and bled on removal. Klebs-Loeffler bacilli negative membrane consisted of fibrin, debris and streptococci.

Ulceration of fissuring in the angles of the mouth, resembling luetic fissures occurred in cases showing marked asthenia, i. e., in cases of measles which were complicated or had suffered from some previous infection shortly before. They usually occurred during the third week, males more than females; 17 cases noted in all ages up to four years. These fissures made no difference in the severity of the disease but only pointed to an intense asthenic condition.

Glossitis occurred in one boy aet two years, on ninth day followed by resolution in six days.

Ulceration of the soft palate:—Superficial in character on one or both sides sometimes coalescing and giving the palate an ugly appearance, covered with greyish white membrane which bled on removal, but never showed the appearance of K-L bacilli. These ulcerations were noticed most frequently in nursing infants, although they appeared in children up to three years; males and females equally attacked anywhere from the third to the twenty-eighth day.

The cause seemed to be excoriation of the epithelium by the nipple, breast or finger in the process of sucking; infection and superficial ulceration taking place. No severe sloughing or deep changes in the tissues of the palate were ever noted except in one case of noma. They were watched very carefully on account of their position, being situated at junction of the hard and soft palate and sometimes close to the gums for gangrenous changes, but only noted as above.

Ulcerative Stomatitis:—Occurred rather infrequently but always of severe grade. One case was followed by necrosis of the inferior maxilla (ramus) and perforation through the cheek and in another by the loss of most of the teeth in the mouth in both jaws. The condition never occurred alone but always in association with some other complication. Total number, nine cases, males five, females four; ages two to three years. Five cases three to four years. Time of incident: One, third day; three sixth day; one eighth day; one ninth, and one on the eleventh, seventeenth, eighteenth and twenty-fifth days respectively, as closely as we were able to estimate or note.

Noma:—One case, male, aet two years, on the 27th day of disease, preceded by a severe ulcerative condition of the mouth; gangrene of the whole superior and inferior maxilla and cheek on the left side. The first area seen was scraped and swabbed with pure phenol, but the affair was progressive and death occurred on the thirty-third day.

Acute Gastritis:—Occurred in one case.

Acute Ileo-Colitis:—Attacked children under sixteen months. Occurring from the fourth to the sixteenth day and affecting males and females equally. Though the number, six, is small. I only have considered those with frequent green, foul, watery stools with mucous tenesmus and fever.

Ischio-rectal Abscess:—One case, boy 22 months.

Prolapsus Ani:—One case occurred to a very marked degree in a child aged three months, female; it appeared on the nineteenth day of disease.

Marasmus:—Followed measles in two cases, one aged eleven months, and one aged fourteen months, death taking place on the 24th and 35th days.

Ear Complications:—Otitis media appearing as a mode of onset has been already stated.

Acute catarrhal otitis media existed in 10 cases. It was manifested by hyperæmic drum membrane but no bulging or discharge and followed by resolution.

Acute Purulent Otitis Media:—Occurred in 43 cases, the right ear alone in 15 and the left ear in 4, both ears in 28 cases.

The day of occurrence:—First day, right ear, 3 cases, left ear, 2; 3d day, right ear, 2, left ear, 0; 4th day, right ear 5, left ear 2; 5th day, right ear 3, left ear 3; 6th day, right ear 3, left ear 6; 7th day, right ear 4, left ear 4; 8th day, right ear 6, left ear 1.. 10th day, right ear 6, left ear 4; 11th day, right ear 1, left ear 4; 15th day, right ear 2, left ear 2; 18th day, right ear 1, left ear 0; 19th day, right ear 1, left ear 1; 20th day, right ear 1, left ear 1.
so that during the first week of the disease the major part of the ears became involved, 25 right and 17 left respectively.

One case of chronic purulent otitis on which a mastoid had been done previous to measles, showed no changes in condition or appearance of the mastoid wound, but a marked increase in the amount of discharge from the middle ear.

Acute Mastoiditis:—Complicated one case on the 7th day; swelling, tenderness and signs of mastoid left side; the drum membrane appeared normal, was incised and ice cap applied to mastoid. After waiting six days, operation. Mastoid showed necrosis of bone, granulation tissue and pus in the tip and antrum. Recovery. Pus showed intra-cellular diplococci.

Chronic Purulent otitis existed in seven cases. One case which had had old otitis with cessation of discharge and healing of drums seven days before, was reignited on the 6th day of the disease.

Duration of the discharge was only noted in four cases: two cases ceased on the tenth day, one on the eleventh and one on the fourteenth day.

Respiratory System:—Broncho-pneumonia, grim captain in the ranks of death, leads the regiment of complications. Severe and so often fatal, its advent is to be dreaded both by the physician and the little sufferer.

The day of appearance:—From 3d to 7th day, 33

cases. From 7th to 14th day, 14 cases were observed. Females 30, males 17.

The disease was most prevalent below the age of one year, 33 cases occurring. One to two years, four cases; two to three years, ten cases. The average duration with recovery was six to fourteen days. Most deaths occurred before the seventh day of the disease.

Both lungs were affected with consolidation in eighteen cases. The lower lobes posteriorly were more markedly involved and in the greater number of cases; right and left sides equally involved; upper lobes gave signs in only ten cases.

The distinction between broncho-pneumonia and capillary bronchitis is purely an arbitrary one and was made to designate those cases with signs of distinct consolidationi n contradistinction to those with no areas of infiltration and only rales present. The clinical course was the same.

Pulmonary œdema developed in one boy aged two and a half years on the eighteenth day of broncho-pneumonia and the twenty-seventh day from onset of measles.

Von Pirquet reactions for tubercle bacilli were tried in eight cases of pneumonia with only one positive result.

Tonsils:—Showed mild inflammatory conditions in fourteen cases. Only one case showed the presence of Klebs-Loeffler bacilli, boy aged two years. Very mild attack; this condition did not influence the course.

Vincent's Angina:—One case; the membrane and ulceration not severe; the specific organisms found.

The severity of the nose and mouth condition was not noted in cases of measles as a routine in those with pre-existing adenoid and tonsillar hypertrophy; one case only was noticed. This showed a thick dirty discharge, foul and purulent from the mouth and nose and interfered with marked degree with respiration. This case developed pneumonia.

Catarrhal Croup:—Attacked females more than males, six to three. All cases were above two years, except one, and that case age five months. One case of croup ushered in the disease. The day of occurrence throws no light, as the complication occurred on the first, third, fourth, fifth, seventh, eighth, tenth and fourteenth days.

Capillary Bronchitis:—Considering those cases where no areas of consolidation were manifest occurred at onset in two cases. Majority of cases were coincident with height of fever and full appearance of the rash. Males ten, females eight. Age under one year, five cases; one to two years, none. Two to three years thirteen cases. The majority of cases occurred from the third to sixth day, sixteen out of a total of eighteen; many of these latter developed a broncho-pneumonia.

Pertussis was complicated by measles with dire results; sexes and all ages were equally attacked; thirty-one cases were thus affected. Broncho-pneumonia alone complicated this disease with eight deaths in twenty-two cases. Pertussis with measles and broncho-pneumonia and other complications causing twelve deaths in the total of thirty-one cases, giving a mortality of 38 per cent.

COMPLICATIONS:

Nervous System:—Tubercular Meningitis, one female, age three years, occurred on the fifteenth day. Death on the twenty-third day. Von Pirquet action positive. Spinal fluid 35 cc. tubercle bacilli and lymphocytes present in the fluid.

Convulsions occurred in six cases, three in children with a rachitis and three complicating broncho-pneumonia. Age was noted in three cases, seven and ten months, and three years.

Acute hydrocephalus developed in one case, non-tubercular in nature.

COMPLICATIONS:

Eye: Purulent Conjunctivitis. Staphylococcal two cases, one male nine months, one female age three years, on the third and fifth days, with resolution in four days.

One case of purulent conjunctivitis very severe in a boy of two years on whom Calmette reaction had given a positive result one month previously. The measles relit the reaction and corneal ulceration and perforation were feared but at the end of two weeks the eye healed.

One case of pneumo-coccal conjunctivitis with ulceration and perforation with extrusion of the iris occurred. The infection was intense, perforation occurring in three days.

Other Complications:—Eczema of the face and neck, male, age eight months, occurred on the fifteenth day. The child had had eczema, measles relit and markedly exaggerated the condition.

Pustular dermatitis, general, in boy three years, appeared on the sixth day.

Abscess of scalp, female, age three months, on the fourth day.

Cellulitis of neck, occurred on the fourth and fifth days. Females aged one and one and one-half years. Open incision necessary. Recovery.

Ulceration of vulva, child 2 and one-half years, on the twelfth day, lasted fifteen days.

Perioseitis of the fourth rib in a male aged eight months, non-suppurative, on the 27th day after onset.

Varicella complicated measles in five cases, both diseases co-existing, neither making any difference in the severity of the other. Four females and one male, age made no difference; days noted were the second, eighth and sixteenth respectively.

Minor Complications:—One child received a lacerated wound of scalp which suppurated. Folliculitis.

Intestinal toxæmia in one case.

Measles in Conjunct on with Other Diseases:—Congenital syphilis, one case. Tubercular arthritis, two cases. Pertussis, thirty-one cases.

Measles complicated scarlet in eleven cases.

The temperature in uncomplicated cases lasted from five to seven days on the average. Hyperpyrexia noted in seven cases with temperature of 106°, one case 107°.

The pulse was in proportion to the temperature but seemed to be slower than in scarlet as compared in sixty cases of the latter disease at onset.

Mortality, Day and Causes of Death:—Males 13, females twenty-two. Age, two months to one year, twenty-one cases; one to two years, ten cases; two to three years, four cases.

Measles with Broncho-Pneumonia:—8th day, two cases; 9th day, two cases; 7th day, three cases.

With Broncho-Pneumonia and Catarrhal Croup:—5th day, one case; 9th day, one case.

With Broncho-Pneumonia and Pertussis:—5th day, one case; 7th day, one case; 11th day, one case; 16th day, one case.

With Broncho-Pneumonia, Pertussis and Otitis Media:—14th day, one case; 15th day, one case.

With broncho-pneumonia, Pertussis and Marasmus:—25th day, one case.

With Pertussia and Convulsions:—6th day, one case.

With Broncho-Pneumonia, Noma and Otitis Media:—27th day, one case.

With Broncho-Pneumonia and Marasmus:—35th day, one case.

With Broncho-Pneumonia and Otitis Media:—11th day, one case; 12th day, one case; 14th day, two cases.

With Broncho-Pneumonia and Convulsions:—4th day, one case; 5th day, one case.

With Broncho-Pneumonia and Acute Ileo-Colitis:—9th day, one case.

Measles with Broncho-Pneumonia and Cellulitis of Neck:—6th day, one case.

With Broncho-Pneumonia and Hydrocephalus:—5th day, one case.

With Broncho-Pneumonia, t. b. Meningitis and Otitis Media:—23d day, one case.

With Broncho-Pneumonia, Ulcerative Stomatitis and Otitis Media:—22d day, one case.

With Acute Ileo-Colitis:—10th day, one case.

Measles, Scarlet, Suppurative Cervical Adenitis, Broncho-Pneumonia and Acute Ileo-Colitis, two cases on 5th day and 21st day.

Scarlet, Measles, Broncho-Pneumonia, Diphtheria; Otitis Media and Ileo-Colitis:—two cases, 8th day and fifth day.

Measles, Suppurative Parotitis and Congenital Syphilis:—One case.

Age did not influence mortality noticeably. Twenty-one out of ninety-nine cases, under one year. Ten out of forty-three cases, one to two years. Four out of thirty-seven cases, two to three years.

Average about 22 per cent. first two years, 10 per cent. two to five years.

Total mortality in 212 cases was 16.5 per cent.

Prophylaxis:—Antitoxin, 3000 units, was given to every child with measles at the onset of the disease; 5,000 units were repeated at the first signs of croup or the appearance of any whitening of the tonsils.

Protargol, 8 per cent., was instilled into all eyes two or three times and repeated every two hours where the conjuctivitis was marked.

Fresh air was freely circulated as all the windows on one side of the wards were kept open and severe cases were placed on the porch or roofs.

I regret to state that the examination of the urine was neglected, but no cases developed any clinical signs of nephritis.

Vaginal conditions were not noticed except in one case described. Joints and bones, only one case noted as related.

SUMMARY.

Number of uncomplicated cases, 101.

Total number of cases, 212; total number of deaths, 35; total number of uncomplicated cases, 101.

Mortality, 16.5 per cent.

Epidemic began February 10, 1908, and ended May 19, 1908.

Total complications: Broncho-pneumonia, 60; acute purulent otitis media, 33; diphtheria, 1, noma buccalis, 1; marasmus, 2; varicella, 5; intestinal toxæmia, 1; congenital syphilis, 1; suppurative parotitis, 1; non-suppurative parotitis, 1; suppurative cervical adenitis, 1; infected wound of forehead, 1; ulcerative stomatitis, 9; tubercular meningitis, 1; folliculitis, 1; acute ileo-colitis, 6; convulsions, 6; catarrhal croup, 4; cellulitis of neck, 2; periostitis of rib, 1; pustular eczema of neck, 1; prolapsus ani, 1; mastoiditis, 1; ulceration of vulva, 1; abscess of scalp, 1; hydrocephalus, 1; pertussis, 22.

In conclusion I wish to draw your attention to the following:

The infrequency of the disease in children below six months of age.

The onset of the disease with a sharp rise of temperature.

The numerous modes of onset which masked the appearance and might hinder the diagnosis except for the presence of the epidemic.

The marked pulmonary complications in the ward when pertussis was present.

The absence of tuberculosis as a complication or sequelæ.

The distinct prevalence of broncho-pneumonia and the relief afforded cases treated on the porches and roofs.

The contagious character during the incubation stages.

The absence of diphtheria and the great call for antitoxin early in the disease.

The constant presence of Koplik's spots.

The fact that in all deaths broncho-pneumonia was present.

The early involvement of ears and the infrequency of mastoid.

The comparative absence of eye complications.

To Dr. Roland G. Freeman I wish to extend my thanks for the privilege of reporting the epidemic and also to Drs. C. M. Quinn, G. M. Smith, and F. Hart for their notes and data.

135 West 129th Street, New York.

CONDITIONS VISIBLE WITH THE X-RAYS.*

BY FREDERICK M. LAW, M.D.
Radiologist to Woman's Hospital; Radiologist to Manhattan Eye and Ear Hospital.

THERE seems to be considerable uncertainty among physicians as to just what conditions the X-ray will demonstrate, and sometimes cases are referred to the radiologist that are absolutely impossible to do anything with, therefore, in this paper, I will attempt to describe what can be shown without going into the detailed technique of how it is done.

The usefulness of the X-rays, as you all know, depends on their power to penetrate objects opaque to ordinary light, and the diagnostic properties are governed by the different densities of the structures through which they pass, and varies inversely as the densities of these structures. Thus bone, being dense, offers considerable obstruction to their passage, allowing fewer of the rays to penetrate to the plate or fluorescent screen, bony structure being visible therefore as a black mark on the screen and as a transparent spot on the photographic plate. Soft tissue offering little obstruction acts in the opposite way.

*Read before the Woman's Hospital Society, October 25, 1910.

The different degrees of density caused by pathological conditions show in proportion as the density varies.

The picture cast on the fluorescent screen or photographic plate is simply a shadow caused by the obstruction of the rays by the object intervening between the plate or screen and the tube. The different densities of the object producing the different tones in the shadow.

This image, being a shadow, and not a picture, has no perspective for the reason that the source of illumination arises from a single point. The effect of perspective can be produced by means of a technique too long to describe here.

Another feature caused by the illumination arising from a point, is the distortion of the image. The rays travel from a point in the tube in straight lines radiating in the form of a cone, consequently an object directly perpendicular to the rays will be shown in its true shape, and to a certain extent its size, but the more the part is removed from the perpendicular and exposed to the action of the divergent rays, the greater will be the amount of distortion. Hence a radiograph covering a large area will show a fairly true representation of the part directly under the tube, while the structures further from this perpendicular point will be progressively distorted. Alteration in the size of the object being radiographed also occurs in proportion to the distance it is separated from the plate or screen. The greater the distance the larger and more indistinct is the shadow. The distance of the tube from the plate also plays an important part in determining the size of the object.

There are other factors which affect the definition of an object, but which involve the technique of the operation and will be omitted from this paper.

The average surgeon is not interested in the making of a radiograph itself but there are some points in the preparation of the patient which it is well for him to know.

In the first place, a complete clinical history should accompany the patient in order to help the radiologist in the interpretation of the negative. It is just as important for the radiologist to know the history and symptoms of a case as for the one who makes the physical examination.

A point to be noted in regard to dressings over a part to be radiographed is, that preparations containing iodoform, bismuth, mercury or lead should be avoided if possible, as they offer some obstruction to the ray. If such a preparation is used the radiographer should be told so that same may be removed previous to the exposure. The same information should be given when metal splints are used to immobilize a fracture. Plaster dressings and adhesive tape containing zinc obstruct the rays, but not enough to seriously interfere with the result.

In abdominal work it is always necessary to thoroughly clear out the intestinal tract. The patient should have no food for eight hours, and the bowels thoroughly flushed before being radiographed. Fæcal masses in the intestines produce shadows which may confuse one in the interpretation of the plate. Accumulations of gas will also show, but as they produce a dark spot on the plate, can usually be detected.

When a radiograph of the stomach or the large intestine is desired, the walls must be coated with a substance opaque to the rays. Bismuth subcarbonate is usually employed. This is given in a number of ways. I usually give it in artificially soured milk or a rice broth flavored with something agreeable to the patient. For a radiograph of the stomach, this is given just before the exposure is made. For one of the lower bowel it must be given several hours before, but for the latter an injection of bismuth is preferable.

It must be remembered that the X-rays do not show positive evidence of disease as one would view it in a pathological specimen, but do show a change from the normal appearance, the degree of change being governed by the change in density caused by the diseased condition, therefore a surgeon must be thoroughly familiar with the appearance of the normal part before he can correctly interpret his own plates.

Bony structures show very clearly and any change in position, continuity or structure, can be very readily detected.

A caution I must impress on you regarding fractures is that a fracture may exist and not show in a fluorescent screen examination. If there is a possibility that there might be a fracture and it does not show on the screen, always have a plate made. The plate is more sensitive than the eye and will show a fracture without displacement, when it will not be visible on a screen.

There is one other caution involving bones that the surgeon who views his own plates must bear in mind, and that is the presence of unossified cartilage and the ossification of the epiphysis in children. They may be readily mistaken for fracture. Diseases of bone show very well, necrosis allowing more rays to penetrate than normal bone and conversely sclerosis being denser shows lighter than normal.

Periostitis shows the separation of the periosteum from the bone and according to the duration of the disease the presence of necrosis or sclerosis. Sarcoma shows clearly and some observers claim to be able to differentiate between the various kinds as well as from exostosis, chrondroma and gumma. Rickets and epiphysitis may be shown. Tubercular conditions may be shown, the appearance varying with the stage of the disease.

Synovitis, if well marked, will show by a blurring of the open spaces between the joints, differentiated only by comparing with the corresponding normal joint.

Ostitis and osteo-arthritis show well, the latter showing the presence of osteophytes and erosion of the articular surfaces.

Anchylosis of a joint shows by the obliteration of the articular space.

Loose bodies in a joint show or not according to their composition.

Rheumatism and gout will show in the deposit of uric acid salts in and around the joint. These salts show in proportion to the base with which the uric acid is combined. Calcium and magnesium offer the most obstruction and therefore show best. Fortunately these salts are more frequently present than any others in gouty deposits.

In diagnosing abdominal conditions the X-rays

have a very limited field. Its principal use is in detecting the presence of calculi in the kidney, ureter and bladder.

These can be shown with a fair degree of certainty in a person of moderate size and of not too muscular development. In a patient whose tissues are hard and compact, the use of a tube of high penetrating power is required, and this produces rays which are liable to penetrate the calculus.

If one can secure a radiograph which shows clearly the spine and transverse processes, the last rib, the psoas muscle and preferably the kidney, the presence or absence of a calculus of sufficient size to call for surgical interference will be determined.

The composition of a stone exerts considerable influence on its detection. Oxylate of lime casts the densest shadow, phosphate of lime and uric acid or urate of ammonia are liable not to show. Sometimes it is necessary to make several plates before getting the shadow and in all cases where symptoms point strongly towards calculi and its presence is not shown after repeated exposures, the advisability of operation should be considered.

There are several conditions which will simulate the shadow cast by calculi and these must be carefully considered by the surgeon in examining his own plates.

Scar tissue from some previous operation on the back, calcified mesenteric glands, caseous material in a cavity in the kidney, fæcal contents, gall stones in the common duct, abscess in the kidney, neoplasm in the kidney, spots on the photographic plate, foreign bodies in the alimentary tract, calcified spots on the walls of the arteries. The most frequent error is in the presence of phleboliths in the region of the ureter. It may be necessary to pass a ureteral bougie to determine the position of the shadow. The size and position of the kidney can be shown by injecting colargol into the pelvis of the kidney by means of a bougie passed into the pelvis.

Blood offering considerable resistance to the passage of the rays will cause a congested kidney to show fairly well.

In stomach conditions we have a very difficult and uncertain proposition. The most useful application of the rays is in determining the size, shape and motility of the stomach. Bismuth is given or air is injected and the shadow carefully studied on the fluorescent screen first, then by the appearance on a plate. Considerable information may be obtained, but must be used as confirmatory to a previous diagnosis.

Gall stones can sometimes be shown, but a negative finding should not be taken as evidence of their absence.

The liver is so dense that the rays penetrate it with difficulty and diseased conditions are determined only by the abnormal outline of the shadow of the liver as a whole.

Tumors in the abdominal cavity show simply as a shadow where normally no shadow should exist and this shadow may easily be simulated by fæcal contents.

Strictures of the æsophagus or diverticula may be determined by giving a bismuth meal or by passing an opaque bougie.

The size, shape and position of the heart can be shown. Pericarditis with effusion shows an enlargement of the shadow. Mitral stenosis produces a characteristic change of form.

Aneurism shows very clearly.

In diagnosing pulmonary conditions there is much controversy, but considerable valuable information can be gathered by the X-rays.

The movements of the diaphragm and ribs can be clearly observed on the fluorescent screen.

The lungs are particularly transparent to the rays and any change in the density is quickly noted. Thus pleurisy with effusion, emphysema, abscess, cavity, consolidation, œdema, enlarged bronchial glands, and to a certain extent congestion, can be shown. There are points on differential diagnosis which need not be discussed here.

Regarding examination of the lungs for tuberculosis by means of the X-ray, it is certain that they will show conditions which will lead to a more careful study of the case and will record the progress of the disease.

In nasal conditions it is useful to show the presence of pus in the antrum of Highmore, the frontal sinus and sometimes the sphenoid. The mastoid cells are clearly shown and abnormal conditions readily detected.

Foreign bodies in the various structures can be detected and accurately located.

There is much interesting information on diagnosis that is necessarily omitted from this paper in order to limit its length, but from this enumeration I trust you will have a clearer idea of what can be done with the X-rays.

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SYPHILIS.*

BY HARRY LAVINTON PURD, M.D., NEW YORK.

NO condition seems to have been treated more empirically than syphilis. In a way all syphilitics received generally about the same treatment: in the first year mercury, second year mercury and iodide, so called mixed treatment; the third year iodide, after which the patient was usually pronounced cured to do as he liked and marry if he chose.

With the knowledge and the discoveries which we now have, to a great extent our method of treatment has been revolutionized, and bids fair to effect a complete cure. Many of those who were pronounced cured in the past, we find still suffering from latent or tertiary syphilis. They passed into the hands of the general practitioner, with the internal lesions of lungs, pleura, liver, kidneys, or a general arterio sclerosis, also the susceptibility to recurrent erysipelas, without the origin being recognized. But with the Wasserman test or its modification these conditions may now be recognized and much done to relieve these sufferers. A condition of doubt is also removed, as it was an utter impossibility, without the methods now employed, to determine the exact etiological factor which may have been present some ten or twenty years previously. These cases were thought to be a result

*Read before the Lenox Medical and Surgical Society, October 22nd, 1910.

of any early syphilitic infection causing changes in the circulatory or lymphatic systems, but few believed that the disease still existed, in a more or less active state. Notwithstanding the fact that general syphilitic treatment met with good results many of the old tertiary gummatous deposits seemed to be capable of communicating the disease both directly and to offspring. The fact that a mother suffering from tertiary syphilis might impart the disease to a child in utero and still not infect her husband should have established the fact that the germs then unknown were still active in the circulation; but with the means then at hand the three years' treatment seemed to meet the general requirements and no further treatment was instituted unless manifestations developed. But how different now and what cause for satisfaction in that practically we are at the zenith of our ability to treat this dread disease in an accurate, rational and scientific manner from its very inception. Originally we were taught, after seeing the chancre to instruct the patient to watch carefully for the secondary eruption, and then have him report, which meant a delay of forty or more days of the most active stage of the disease. Now this would be regarded as almost criminally negligent; all suspicious sores should be examined at once for the spirochætæ and if found, treatment instituted at once. The treatment should be carried out in connection with the laboratory worker, as objective signs may be lacking with the disease still in a most active state as revealed with the Wasserman or Noguchi reactions.

Mercury properly administered may still be regarded as near a specific as we have and there are two ways to properly administer it, viz., by the inunction, or by the hypodermic method. Notwithstanding the disadvantages and objections to the inunction I have always preferred it because the results which while not quicker, seemed to have more lasting effects. The method is familiar to you all, i.e., using a large skin area and having the patient sleep in a fairly closed room. It is really treatment by inhalation.

Previous to this it has been my custom to treat the disease from its inception by this method alone as I have always felt the iodide was absolutely useless as a curative factor. It has been used with benefit in the late tertiary conditions, for the syphilitic meningitis, the blood clot after hemorrhage in the brain, to assist absorption of the clots, but to check the disease, in other words, to have a specific action on the syphilis, I question its potency to any degree. I gave the mercury to the point of tolerance in each individual. The average patient has stood about twelve inunctions, zi each, of zi of the mercurial ointment each night continuously, the effect lasting about three weeks; that is to the salvation point it took about three weeks for all evidence to subside; it was therefore my custom the first year to reduce and give about eight inunctions depending upon individual susceptibility, beginning the first of each month and continuing each month for a year. The second year to reduce the inunctions, and the third year to reduce the amount, not using the iodide at all.

While the results from this method have been universally good, so far as objective signs are concerned, there was still no proof that the disease had been cured and this prompts me for discussion's sake to offer my ideas as to future method. That three years of treatment is unnecessary in many cases I fully believe. I also believe that each case must be treated until cured and that this time must be determined by the tests before referred to. The mercury treatment must be started preferably by inunction, or hypodermic, as soon as the chancre shows the presence of spirochætæ, and continued to the point of tolerance for one year, then discontinued for six weeks in order to have the Wasserman or Noguchi tests made. If they are negative in reaction, treatment should be discontinued, but the test made again in about three months; six months later the tests repeated, and if no evidence of the presence of disease is obtained, the patient may be discharged after urging upon him the importance of having this test made at least once a year.

Where the test is positive the mercury should be continued as at first, to the point of tolerance, for another six or eight months when it may again be discontinued in order to make the tests.

As to the relative merits of the inunction and hypodermic methods, figures differ, but from observation the results seem to be about the same. Mercury by mouth or rectum requires a longer period to obliterate the reaction with the effect much less lasting; it therefore must be considered a less efficacious method.

Can syphilis be aborted?

The method of Finger of Vienna is, at the time of the appearance of the chancre, to examine for spirochætæ, and then employ the Wasserman reaction. If the latter proves negative, he excises the chancre and in many cases no other signs develop. He advises however that the Wasserman test be made yearly. This coming from such excellent authorities as Finger, Müller, Morawetz and others makes it worthy of serious consideration. If, however, after examining the chancre for spirochætæ, the Wasserman reaction is positive, these and other observers have felt that the disease was much less vigorous.

That the Wasserman or Noguchi tests are practically accurate I fully believe, and have the widest range of usefulness in all forms of syphilis at any stage whether acquired or of congenital origin.

We are awaiting with much interest the treatment of Paul Ehrlich, of Frankfort, which, I believe, is an arsenic preparation chemically dioxy-diamide arseno benzol and consists of simply one or two injections. While it must be confessed it does not appeal strongly to one's confidence, it is still too early to obtain authentic reports of results, but it is to be hoped that it may be all that is claimed for it, or at least may lead to improved methods of treatment that may thoroughly cure and eradicate this almost malignant diseases.

966 Lexington Avenue.

Anaphylaxis and Hay Fever.—R. Hoffmann (Berl. Klin. Woch., Oct. 17, 1910) traces a relationship between hyperthyroidism and hay fever; the thyroid is to be regarded as an accumulator for the vagus and the suprarenal glands serves a like purpose in the splanchnic region. Hyperfunction of the thyroid will hypersensitize the vagus and tend to bronchial asthma. Pollen disease is a hypersensitive condition especially of the upper respiratory mucosa, occasioned by heterogeneous albumens from certain pollens, and in individuals of subnormal vasodilator irritability.

THE LATEST REPORTS ON SLEEPING SICKNESS.

BY S. R. KLEIN, M.D., PH.D., M.A.
Consulting Pathologist and Bacteriologist of the Bobrow Laboratory; Director of the Fordham Research Laboratory.

RECENTLY very interesting experiments were made with *Glossina fusca*. It is also possible that the Glossina morsitans, G. pallideps and G. longisalpis are also implicated. At present it would appear that not only tsetes but all biting flies must be considered as possible carriers. Thus in the French Congo, *Martin Leboeuf* and *Ruband* have noted how young children are often affected and think that certain domestic insects, such as mosquitoes of the genera Stegemyia and Mansenia, may be to blame.

The late *Prof. Dr. Robert Koch noted*—that though dogs and monkeys are known to have become naturally infected, the occurrence is so rare and the animals have died so quickly after infection that practically they may be disregarded as reservoirs of the disease. He has further drawn attention to the probability of the disease being communicated by coitus. Thus of twenty-six women in the German Segregation Camp where there was a total of 425 cases, seven had never been in sleeping region sickness. It would seem that they had contracted the disease from their husbands, all of whom had died of sleeping sickness. When sleeping sickness was found in villages outside the glossing belt, women only were found to be infected; the children and men who had not visited sleeping sickness districts being unaffected. In one case the three wives of a man suffering from sleeping sickness contracted the disease. As has since been pointed out, if the converse can take place and males be infected by females, it is quite possible that the tsetse fly is only an occasional agent of transmission, and the outlook, therefore, very grave.

Dr. *Minchin* (Quarterly Journal of Microscopic Science) found that the capability of infecting a vertebrate animal only lasts for a period of 48 hours; with a longer interval no infection was obtained. It was also noticed that freshly caught flies may produce infection, with trypanosomes without having been fed previously on infected animals. Experiments made on monkeys show that many freshly caught flies are either free from the infecting agent or that some monkeys are immune. Thus in one case 2,299 flies were fed on monkey over a long period without infecting it, whilst in another case as small a number as 134 flies produce an infection in it. Professor Aujesky reports a case where one male and one female was enough to infect a chimpanze of the greatest size he ever saw in German Africa, but otherwise the theory of *Pars resistentiae minoris* can be applied here as well as in other regular inflammatory and contagious diseases.

Moore and *Brainl* had observed a curve of infection, the number of parasites increasing and diminishing in the blood, and direct attention to the formation of what they call "latent bodies" found in the lungs, bone marrow and spleen. These latent bodies eventually become transformed into small tryponosomes but apparently only a certain proportion of them undergo this change, the others disappearing. This indicates a complete cycle in the blood of a single host, the rat being the animal studied. As regards methods of diagnosis, recent paper by Martin and Leboeuf may be mentioned. They recommend

I. Examination for ten minutes systematically of a fresh film of blood taken from the pulp of the finger, or preferably two such films taken from two different fingers, one from the right and one from the left hand.

II. If the first examination is negative, and the patient has enlarged glands, these should be punctured in the cervical region. If the neckglands are too small try the submaxillary or the inguinal.

III. If the parasites can still not be found, take ten cc. of blood, centrifuge and examine the leucocyte layer, making a couple of films.

IV. If the result be still negative, the case is probably healthy. But if necessary and if there is no objection, proceed to lumbar puncture, removing ten cc. of the cerebro-spinal fluid and centrifuging for fifteen minutes.

499 Pelham Avenue.

Abdominal Pain.—Howard A. Kelly (Interstate Med Jour., Feb. 1911) finds the art of diagnosis in abdominal affections to rest largely in the question which organ gives rise to the pain of which the patient complains. Aside from appreciable tumors it is usually pain that induces the patient to seek consultation; and the physician's success depends on whether he can determine the organ from which the pain arises. When any organ is seriously affected pain is apt to be felt in that part of the abdomen in which the organ is located; the patient puts her hand over the spot or points to it with her finger. Rarely does she complain of left sided pain when the disease has its seat on the right—though this may be the case in appendicitis. Occasionlly a lesion in the right kidney will give pain on the left side. The pain question is not always easy—for three reasons: It may be felt at some distance from the painful organ (reflex pain); the patient can often only indicate vaguely the location of the pain; on the right side at least eight different structures may be confounded one with the other.

Aside from those of the intestines, and the pains of a temporary indigestion, the following tissues and organs may occasion pain: the kidney, the gall bladder, the pylorus, the stomach, the vermiform appendix, the ureter, the sacro-iliac joint, the sigmoid flexure, the uterus, the fallopian tube. Patients will sometimes indicate precisely the region in which the pain begins; but if the pain becomes more intense and diffuse, the indications are not so valuable; a pain fixed in one spot almost always means some demonstrable lesion, so that even when a hysteric complains of a particular pain always in a particular spot, one should carefully seek some definite cause. Pains purely functional or neuropathic are felt as burning or migratory, often they cause the sensation of something moving inside, like a worm. With regard to pain as an aid to diagnosis, one had best outline the area of pain on the surface of the body in ink; these studies of skin records may be transferred to gauze and filed away; or may be photographed and filed in a special book, with all necessary references to the history of the case. The next step is to endeavor to reproduce

the pain by pressure upon the organ, as is done habitually in the diagnosis of chronic appendicitis, gall-bladder and duodenal disease. One may thus also press down upon the kidney, handle the uterus tubes and ovaries bimanually, asking the patient if the pain caused by pressure is not the same as the pain complained of. Kelly has even gone so far in difficult cases as to open the abdomen, or make a large retroperitoneal incision under local anesthesia, so that by handling the various structures one by one, with the patient fully conscious, he could then discover which one gave rise to a like sense of pain.

Another way to differentiate pain is to catheterize the ureter and to inject into the kidney pelvis sufficient fluid to bring on a mild renal colic. Most vague pains, right or left, especially those in which the patient grasps the loin between thumb and fingers to show where the pain is felt, are due to a displacement or an obstruction in the upper ureter. If the kidney is found not to be the source of the pain, then the organ which causes it is either the upper or the lower abdomen.

Care in investigating, reproducing and finding the habitat of pain will obviate unjustifiable operations. Kelly has repeatedly seen the appendix removed, tubes and ovaries oblated, and kidneys or bladder operated on, while the seat of the disease was subsequently proved to be an organ other than that subjected to the operation. Some patients have had two or three useless operations thus performed. One source of pain should always be sought — that due to loose sacro-iliac joint; this is apt to be associated with more or less severe headache, generally on one side, over the joint involved. This pain sometimes extends through the front of the joint; and may then be referred to some pelvic organ. It ran as a rule, he demonstrated, by a shortening of the affected leg, and by rotating and forcing it strongly or by pulling it outwards.

Cholera from a Modern Standpoint.—Dr. A. H. Doty (Am. Jour. Med. Sc., Jan., 1911) considers our quarantine against this disease adequate; optimism here has support in science and practice. It has long been believed that the ravages of cholera and other infectious diseases in the East indicate what would occur if these diseases were to enter any community; but this belief is unfounded, for such conditions will never occur wherever modern sanitary regulations are in force. In the absence of a general infection cholera does not extend rapidly; and where proper sanitation is the rule, should soon occur. A general infection aboard ship or on land is a serious and justifiable reflection on those charged with the health of those either on the ship or in the community where the infection occurs. Cholera carriers and mild and irregular cases, may enter a community practically unannounced; so that health departments should be prepared to deal with such an emergency—especially when it is known there is danger of cholera. A rigid investigation should be made of the death certificates which give as causes of death gastroenteritis or other intestinal disorders; this should include a bacteriological examination. Practitioners of medicine should aid in carrying out this means of protection. There is thus early and timely detection of cholera, either in the typical or in irregular forms; and when this is done, and in the absence of general infection, it is reasonably certain that no serious results will follow, at least so far as concerns the extension of the disease. We must in the future recognize that isolated cases of cholera may appear in any place which has intercourse with cholera-infected regions; but we must nevertheless understand too that if general infection is guarded against and proper precautions are taken in individual cases (as in the presence of typhoid fever), we need not fear serious results, so far as the extension of the disease is concerned. Bacteriological examination is always an essential factor in determining the presence of cholera; at the New York Quarantine Laboratory nearly half the examinations of alvine discharges or of the material taken from the rectum by swabs, have been found (even where there was no clinical evidence or special reason to suspect cholera) to show curved bacilli of various sizes and shapes. These organisms oftentimes resembled the cholera vibrios. Where the latter forms are numerous in this examination, the case is regarded as suspicious until the cultural characters prove it be otherwise, especially when a few actively motile organisms are in the hanging drop. Cultures in cholera carriers and mild cases may show the vibrios, even though the smear demonstrates very few suspicious organisms. Only in the active cases will the smear and hanging drop, made directly from the discharges or rectal swab, afford such unmistakable evidence as is required to pronounce the case bacteriologically true cholera; in all other cases we must isolate pure cultures and prove them cholera vibrios or otherwise by suitable bacteriological tests.

Drugs and the Salivary Secretion.—V. E. Henderson (Jour. Pharmac. and Exper. Therap., Aug., 1910) finds drugs to act upon the salivary mechanism in several ways: reflexly through the center, directly through the center, directly upon nerve endings in the gland, directly upon the gland cells without being excreted in quantity by them; or (if a selective secretion be presupposed) it might be suggested that the presence of certain substances in the blood stream would, owing to the necessity for their excretion, bring about a salivary flow. The salivary center is very readily depressed by anesthetics and by small doses of morphine; if the blood pressure be seriously lowered by ether or chloroform the center will remain inactive for several hours; high pithing or intracerebral magnesium chloride both depress the salivary center. The afferent paths seem very wide. Cortical stimulation brings about secretion, mental effect on the salivary secretion is well known. If the center be active, stimulation of almost any sensory nerve excites secretion, although stimulation of the lingual nerve gives most marked results, secretion beginning in a few seconds and outlasting the experiment. Electrical stimulation is not so powerful as the application of ether to the tongue. The efferent paths are two—the chorda (the more important) and the sympathetic. Variations in temperature, and certain substances secreted by the salivary glands, stimulate them to increased flow. Henderson finds that iodides are excreted by the salivary gland; but their presence in the blood stream does not imitate a flow of saliva if the center is depressed or the nerve connections with the gland are severed; nor

does the excretion of iodides increase a previously existing flow or increase the effectiveness of a reflex stimulation. Salivation from iodides must be from some reflex cause. Such other salts as sulphocyanates, carbonates and nitrites, when injected intravenously, act similarly to iodides. Emetine has a central and a reflex action. Antimony in non-toxic doses acts only reflexly. Ammonium salts have a central action; but also a reflex action, which is probably the more important. Apomorphine acts directly, having no peripheral action in the gland. The salivary center is very labile, readily affected by sensory stimuli and easily depressed by narcotics.

Rest in Early Phthisis.—L. Cobbett (Lancet, Nov. 26, 1910) wisely counsels absolute rest in the treatment of incipient phthisis—a desideratum, indeed, in any stage of that disease. Tuberculosis in man confers a certain degree of immunity; and the hope of recovery depends mainly on the acquisition of the new or improved powers of resistance which (however slight they may be) are the causes of this immunity. Cobbett has injected human and bovine tubercle bacilli respectively in calves, and the resulting lesions show that the powers of resistance which develop during infection, and which lead in favorable cases to cure, are partly local and partly general. Experiments on the cause of the local immunity in erysipelas would tend to show that the local powers of resistance become quickened and improved; possibly the endothelial cells become less sensitive to the poison by reason of the development of an antibody, so that they now react by multiplication to a concentration of poison which would originally have caused necrosis. But whether the local powers of defense undergo improvement or not, undoubtedly they hold the disease in check until new or improved constitutional powers have been evolved and so far perfected as to work powerfully for the arrest of the disease. In man, as in the ox, the severity of a tuberculosis infection is largely determined by the number of bacilli which gain entrance at the start. As tuberculosis runs its course, and the capacity of resistance increases, it will require as time goes on fresh bacilli to infect any new region in the patient's body. Cobbett concludes that resistance to tuberculosis, (like resistance to other infections) is a specific matter, and does not go always (as is generally assumed) with what one regards as the normal bodily health. We prescribe the most nourishing food, fresh air and oftentimes moderate exercise; but Cobbett considers we should ever bear in mind the danger of infection of new areas in phthisis, and do what we can to avoid this at least until the patient has become more immune.

Scoliosis.—E. Hoffman (Deut. Med. Woch., No. 32, 1910) advises educational treatment during the stages of development. The child should be taught what to do to maintain the right posture and thus to correct the deformity. It is told to throw out the chest, to draw in the abdomen, draw back the head, and so forth; and in addition the physician manipulates, so that the patient assumes a correct, or still better, an overcorrected position. The parents should assist in this treatment. Next are exercises for strengthening the abdominal muscles and for mobilizing the spine, such as bending the back forwards, backwards and laterally; and exercises for the arms and legs. In advanced cases the creeping exercises suggested by Klapp, with massage, elevating one side of the chair, or raising the heel, etc., are advantageous.

This treatment, which must be carried out under the supervision of a physician, may require months and even years in advanced cases. The corset is essential in very severe cases, in which it may prove of advantage by relieving pressure upon the heart and lungs, although not for its action upon the deformity itself.

The Heart in Lobar Pneumonia is considered by E. E. Cornwall, (N. Y. Med. Jour., Jan. 14, 1911) who believes that the specific toxin of pneumonia does not seem to be regularly a serious disturber of the heart in the sense that the toxins of diphtheria and influenza are such. Sometimes a severe toxemia, which appears to be a pneumococcus septicemia, is observed in pneumonia, which seriously or fatally poisons the cardiac apparatus or paralyzes the vasomotor center. A constant, and on the whole the most important cause of heart disturbance in pneumonia seems to be the mechanical obstruction in the lesser circulation caused by the pulmonary consolidation. The prevention of toxemic complications is best effected (pending further developments in serum and vaccine therapy) by maintaining the bodily functions in as high a state of efficiency as possible, particularly the functions of the kidneys. From the therapeutic viewpoint a case of pneumonia appears essentially a heart case, in which the problem is to support that organ until the obstruction in the pulmonary circulation has been relieved. Direct support of the heart by stimulation should not be delayed too long in pneumonia; the amount of stimulation should be regulated not only by the requirements of the circulation, but also by the heart's capacity to respond; and the dangers from overstimulation should be kept in mind.

Color-Blindness in the Male is eight times as frequent as in the female, recently declared Prof. E. B. Wilson, of the Department of Biology at Columbia University. He emphasized, moreover, that man is hybrid; woman on the other hand is complete, in harmony with creation. (Thus does science vouch for what everybody has gratefully realized since the beginning of time.) Color-blindness is a sex limited affliction; eight times as many men are color-blind as women. A man may inherit color-blindness from one of his parents; it takes two to transmit this defect to the daughter. If a color-blind man marries a woman not color-blind all their grandsons will be color-blind, but their granddaughters will be able to tell green from yellow—they will know what should go on the Easter hat. Their daughters will escape color-blindness; but their sons will see no difference between the colors of a crow or a parrot. And the daughters of these sons will have a complete color sense. Prof. Wilson used the term hybrid as applied to the human male to mean that while the number of chromasomes which determine a woman's sex are always equal in number for women, men are born only when fate uses an extra

chromasome. Man is the product of an odd number of chromasomes.

Drugs in Disguise.—The Government Bureau of Chemistry, states "The Saturday Evening Post," has confiscated large quantities of cough lozenges imported from abroad and among the ingredients of which are alcohol and ether. The importers represented that they were sold only as medicines for coughs and colds; but investigation showed that being pleasant to the taste, they were in some localities disposed of indiscriminately and extensively as a kind of candy. Attention has likewise been drawn to products imported from Oriental countries under the guise of medicinal preparations, and found to contain opium or morphine. These are put up in various forms, such as small red pills coated with cinnabar. Often they are contained in bottles or wrapped in paper and enclosed in paraffin or in wax globules. Others are in the shape of tablets, and are invoiced as "tonic pills," "stimulant pills," "tea cake" and the like. These articles are recommended for use by victims of the opium or morphine habit, and also by sufferers from coughs or colds. Some labels state that the mixtures are "beneficial for women and children." Often they are in the form of a confection, sweet and attractively flavored; it is hardly necessary to call attention to their dangerous character, especially when placed in the hands of mothers and young children. Preparations commonly sold for the cure of the opium, morphine, cocaine or other drug habits almost invariably contain large quantities of the very drug for which the "medicine" is taken. They are sent indiscriminately into any home; they may actually be handled by grocers, who distribute them to their customers.

A Serious Diphtheria Epidemic.—At one time in the recent diphtheria epidemic in Baltimore houses in sixteen blocks, and others in Roland Park were under strict quarantine, fine hospitals were closed to the public, except for emergency cases, and seventy-six positive cases of diphtheria were under the surveillance of the health department. In one institution, at least, the dispensary was closed. At none of the hospitals that were closed were cases of diphtheria discovered; but the order for clothing was given to protect the patients in these institutions. The health department ordered the subjects from whose throats positive cultures were taken to be isolated and the houses in which they lived and the other inmates to be placed under quarantine.

Scarlet Fever is a local disease involving the naso-phanynx, in the opinion of F. C. Schumacher (Am. Jour. Obstet., Jan., 1911), who holds that all the constitutional symptoms are due to the toxemia produced by the strephococcic infection of the throat and nose, which is a complication of the pure scarlet fever infection. The more severe the local naso-pharyngeal conditions the more severe will be the constitutional symptoms. The germ causing scarlet fever is no doubt to be found in the exudative membrane covering the tonsils and adenoids and also in the lymph channels, and the discharges from the naso-pharynx and ulcers about the mouth and nose. The rash caused by the toxemia travels to and over the body surface by way of the superficial lymphatic system and not by the blood current. The contagion of the disease is not found in the desquamated skin (directly) but is found in the discharges from the naso-pharynx, ulcers, suppurating glands and ears of sufferers. The contagion of the disease end with the cessation of these discharges. Desquamation is not a positive sign of recent scarlet fever, as this disease can exist without any subsequent desquamation, which latter may moreover follow upon a number of constitutional diseases of long duration, as pneumonia or tuberculosis; or some local inflammatory condition of lengthy duration as sunburn or ivy-poisoning, or the injection of some such drug as arsenic; or the external application of strong antiseptics (carbolic acid or formaldehyde gas). The complications of scarlet fever are due to the toxemia.

Facial Malformation.—H. A. Potts (Interstate Medical Journal, February, 1911) holds that the first permanent molars eruptying at about six years, are the most important teeth in the mouth; they appear before any of the deciduous teeth have been lost; the loss of one or more of them invariably leads to faulty development of the dental arch, and of the bones of the face and nose, or both. Decay should not be allowed to persist in the mouth, because by it the teeth are lost and cavities harbor pathogenic organisms, endangering not only the patient himself but those with whom he comes in contact. Cavities in teeth also harbor the putrefactive organisms which produce ptomaines. Much that regards the first permanent molar applies to the other teeth, both temporary and permanent.

Massage for Naughty Children.—It has long been known as characteristic of the Oriental mind that they do things pretty much as we do—but in the opp site way. It is reported, for example, that when Japanese children grow sulky or unamenable to discipline they have their stomachs massaged, with the result that they become perfectly serene good tempered and willing to learn; it would appear that in Japan all naughtiness is held to proceed from a disordered stomach. Our traditional treatment of naughty children does not greatly differ, except that we operate on the reverse side, perhaps more energetically, and with an implement easily removable from the parental foot.

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WHAT ELSE CAN WE EXPECT?

IN the last few years the medical press has contained many articles, lamenting the defection of the laity, speculating as to why there is not the old-fashioned allegiance to the family doctor, and attempting to set forth methods of relief.

The defection has taken a number of different routes. First may be mentioned Christian Science, and, with it, various phases of faith cure, mental healing, clairvoyance, etc. But, according to our personal observation, the original nucleus of Christian Science consisted largely of transcendentalists in medicine. One of the family physicians whom such disciples abandoned, was so extreme and so consistent in his views that he objected to having an abscess lanced and he used "potencies" so high that by actual calculation, his pills contained, at most, only a small fraction of a molecule of a drug. The difference between such therapy and Christian Science is slight. To-day one can scarcely find a physician of this class. Most of them belong to regular medical organizations, are alert to learn everything of scientific and practical interest in regard to medicine, maintain their sectarian designation only as a sort of tradition and prefer to be known simply as doctors. It is an open question whether the laity have left the physician or whether the physician has left the laity, so far as the mystery-loving class are concerned.

Twenty years or so ago, many prominent neurologists became enthusiastic over hypnotism. This fad lapsed but was revived under the name psychotherapy, with practically the same details except that the patient was not actually hypnotized. We have heard a physician of good repute and, indeed, of rather ultra-scientific tendencies, make the statement in a medical meeting, that, in six months, he had encountered not a single case of chronic constipation that he had not cured by suggestion, even including one that ultimately proved to be cancer of the rectum. When some of the eastern Episcopal churches started the Emmanuel movement,—which, by the way, is an indication that the Church as well as the medical profession, has noticed the defection due to Christian Science—there was no difficulty in securing the backing of prominent physicians.

The laity can scarcely be expected to discriminate in such matters and while there are obviously many conditions, in which the advice to forget a trouble, be brave and cheerful and feel confident that everything will turn out all right, is sound, it seems that the medical profession should make it plain that this sort of therapy is quite as distinct from medical practice as advice regarding domestic life or business.

In a somewhat different spirit, the laity has taken up "Fletcherism," vegetarianism, and all sorts of dietetic and hygienic fads. Almost every one of these is based on a correct principle, but is carried to an extreme both so far as the practice of the principle is concerned, and with regard to the neglect of other factors. In nearly every instance, too, the author of the system claims, apparently with literal truth, that he cured himself after a doctor or many doctors had failed. When one considers that a very large number of physicians otherwise well informed, seem to have no idea whatever of the nutritive value or lack of value of foodstuffs, and that their conception of the word "dieting" is to put a patient on an intolerably monotonous, inadequate or even harmful regimen, it is no wonder that lay faddists, who have reduced everything to a simple system, meet with success.

Speaking of system, reminds us of a noted physician who was at work on a system which included no single item of original discovery, but he was endeavoring to make out a complicated mixture of various forms of treatment and to apply it to all cases of a kind, with the frankly expressed desire to attain the same kind of fame as had S. Weir Mitchell in his rest cure.

Anyone who follows medical literature, must recognize the fact that the interest in various subjects rises and falls in a manner quite analogous to the vogue of hats and gowns. And we must not forget that medical discussions, printed and oral, are no longer in executive session but are included in the popular literature of the day in such a way as to reflect, though in a somewhat distorted manner, the changing views of the profession. We know of a surgeon—and a good operator too—who consistently ridicules the medical practitioner and who asserts that the only two drugs of any value are calomel and morphine. Many a physician talks freely of "drugging" patients,

and minimizes the importance of drug therapy, both to his confreres, in ordinary conversation and in popular lectures, yet, when consulted by a patient, writes a prescription. Is it not about time that the profession realized that there is nothing illogical in treating a chemical process by chemicals or in using drugs actually demonstrated to produce a given effect, on tissues, in regulating motor and secretory function, and on microscopic and macroscopic parasites. There are quite a good many drugs which, intelligently directed, are much more dependable than electricity, which succeed promptly when general hygienic measures fail and which, with due regard for qualifying factors, compare favorably with operative measures, not to mention the time honored requirements "Jucunde et tute."

To some extent, the defection of the laity is due to the increased ability and scientific attainments of the profession. The old attraction of mystery which hung about the physician even a generation or two ago, has been dispelled by the profession itself. The laity has increased in intelligence even more in proportion than has any single profession and the relation of an intelligent layman to a physician who makes no claim at other than the application of scientific principles and accurately gauged empiricism, is, in general, more satisfactory than the old awe at something mysterious and preternatural. But there remains a good sized lay minority that yearns for mystery and obviously, this minority leaves the physician for some peculiar cult or charlatan.

The high standard set by the profession is, unfortunately, not fulfilled by every physician. Every failure to "make good" reacts to the discredit of the whole profession, for, as we have said before, the laity cannot be expected to discriminate. But it is by no means always the humble practitioner of little education and no prestige that is to blame. We recall an instance in which a celebrated physician visited a prominent man between trains, looked him over superficially and charged $500 for the dictum that he should have called a surgeon. An equally celebrated surgeon, thereupon summoned, made the same charge for declaring that the case was inoperable. A physician who seemed to be impartial stated that a certain eminent "professor" had been to his town in consultation eight times, that in six cases he had made a mistake in diagnosis and that in the other two cases, he had made a bad break in prognosis.

Unfortunately, the practical advance of medicine has not been equal in all directions. The laity sees wonderful cures accomplished—wonderful, not only in the lay mind but in the opinion of the profession itself as compared with the possibilities of a few years ago. The laity, being, as has been said, indiscriminating, demands the same result for other diseases and is disgusted because the physician cannot "make good." The specialist and consultant, in particular, feels the force of the demand that he cure quickly. The expectation of the layman is sometimes as flattering as it is ultimately embarrassing and mortifying. For instance, a patient who had been to a physician twice in regard to a chronic diarrhœa of three years' standing called after a considerable interval, not to arrange for further treatment, but to tell the physician through an interpreter that he was "no good."

In spite of all that has been said as to the defection of the laity, the great majority do resort to regular physicians when they have any serious traumatic lesion or disease, whatever their predilection for Christian Science, "Fletcherism," water cures, quack medicines, etc.

And it is only fair to question whether the "good old days" were any better in this regard than in any other. Some of the most scathing verses and cartoons on the doctor are very ancient and they are particularly frequent in the century or two after the discovery of printing. If we go back only two or three generations, we must remember that old people still reminisce about the backslidings of old doctor so-and-so and that a good deal of the loyalty of our grandfathers to their doctor may have been due to the fact that he was the only physician within reach and that the facility with which the laity change physicians at present is partly fostered by the competition and ignoring of old ethical practices by a horde of hundreds of more or less literally hungry doctors.

THE BACONIAN THEORY UP AGAIN.

THE lawyers hold that the very worst witness in his own cause is the man who tries to prove too much; this may be said of our colleague, Dr. Orville W. Owen, formerly of Michigan, and now leading a very industrious life in the quaint old town of Chepstow, on the river Wye, in England. Dr. Owen's industry is, however, not now expended in the healing art, but in proving that Bacon not only wrote all of Shakespeare's works, but did a whole lot of other things besides. In this, we would hold with the lawyers, he is injudicious and works greatly against his own case; for anybody who did all the things attributed to Shakespeare must indeed have led so busy a life, that he could have done nothing else in the all-too-brief span ordinarily allotted to humankind.

Dr. Owen is well characterized as the super-Baconian;

for, compared with other Bacon enthusiasts (who wish only to prove that the great Francis "wrote Shakespeare") he holds that Spencer's "Faerie Queene," Burton's "Anatomic of Melancholia" and all the works attributed to Sir Philip Sidney, Ben Jonson, Marlowe and Poole — practically every glorious work of the most splendid period in the history of English letters, was done by the Baron Verulam of St. Albans. And all this titanic library output must have been done in off hours; for we know also that Francis Bacon was Lord High Chancellor of England—and a very busy one at that, dodging as he had to, the many accusations as to peculation in office which was all too justly hurled upon him.

Most astonishing of all (and here we grieve that any associate in medicine should even hint at such a thing), Dr. Owen is prepared to prove that this same Francis Bacon was a prince of royal blood, being the son of that great Elizabeth, whom all the world has for several centuries rightly extolled as the Virgin Queen; we confess our opinion that Dr. Owen were better occupied prescribing cough mixtures than going about such a business as that. Furthermore our colleague (we must still in grief call him so) declares that Bacon has hitherto been robbed of his proper fame because his royal parentage and exalted position precluded him from publishing under his own name, that he led a curious double existence and did not die in 1626, as history records, but lived until 1642.

We are asked to believe that the proofs of all these things are buried under the mud of the river Wye, where they were hidden by Francis himself. And Dr. Owen is now digging for these proofs, so the lay press reports, guided by directions left by Bacon, carefully wrapped up in a cipher in the "Arcadia," the work so long attributed to Sir Philip Sidney.

We cannot here follow the narrative of the digging, which is extremely exciting, but which is rather in the romantic line than in that pursued in these columns. The world's anxiety regarding the proofs has not yet been satisfied. We would, however, end this notice with recalling a homely proverb, which is to the effect that a man shines best—or at any rate makes himself least ridiculous—when he sticks to the work for which he has been trained.

THE CRIMINAL FLY.

TIME was when sentimental people wrote poetry about the little house fly; at worst he was looked upon as a sort of necessary nuisance, as a sort of scavenger, to be put up with by the uncleanly. But science, armed with the microscope, has been changing all that, just as it has been interfering with many other idyllic things of life. We now even see little infants pictured in agonized grappling with death-dealing flies, fully as large as they and seemingly a great deal more powerful. Indeed, as a criminal the little house fly is assuming proportions veritably mastadonic; his record as a disease-conveyer has been thoroughly looked up during several years past; he has become the subject of a very extensive literature. A few of the counts in the "true bill" that has been drawn up against him are here noted.

The fly occurs in houses in small numbers throughout the winter; and come warm weather these relatively few survivors wake out of their hibernation, become active and then deposit their glistening white, microscopic eggs upon suitable soil. The maggots hatch from the eggs in twenty-four hours; and complete their growth in from five to seven days. They then pass to the oval, brown, resting or pupal stage, in which condition they remain from five to seven days. They don't pass through babyhood, childhood and adolescence; but they start in immediately making a living. If you see small flies, they are not the real thing, the *musca domestica;* but belong to some other species. So the life development of a fly is completed in from ten days to a fortnight—the shorter period in the warmer part of the year. One fly deposits on the average 120 eggs; and as there may be ten or twelve generations or life cycles in a season, there need be no wonder flies should become extremely abundant by midsummer. A pound of manure (ninety-five per cent. of all flies are bred in manure) has been estimated to furnish the right soil for 1200; so that one load should produce two and a half million flies. Fortunate indeed, that breeding is confined to the warmer months; and that but few, relatively, of these insects survive the summer.

Some gentleman with a genius for mathematics has taken his pencil in hand; and has found that if one fly lays at one time 120 eggs, and if this brood of new flies produces another brood in three weeks, that initial patriarch should have 5,184,663,552,000,000,000 descendants from one batch of eggs alone. But the fly, continues the enthusiastic mathematician, will lay many score batches of eggs at a time during the season; and the total must be multiplied by those scores; the resultant figures he mercifully keeps to himself. So the fly season begins with many billions of flies; and the total must be multiplied by those billions; wherefore the total number of flies that might conceivably be hatched in a season would exceed in bulk the size of the whole earth. This catastrophe is fortunately prevented by numerous causes, especially that evening-up factor in evolution—the avidity with which sentient things prey upon one another. A noted author has written of "the fly that does not wipe his feet;"

but the fly does wipe his feet. One may at any time see him do this; he alights for example on a lump of sugar, and carefully goes through his toilet. Each pair of his six legs are in turn vigorously rubbed upon and about one another; then the wings are as conscientiously scraped off; and finally he massages his abdomen with unabated enthusiasm. By this means does he manage to dispose of and to deposit upon the sugar a considerable percentage of those many thousand bacteria (at least 100,000, our mathematical friend computes) which he has collected upon his body, his legs and the remainder of his person.

But the trouble only begins here. For it has been demonstrated by unsparing science that the fly ingests bacteria; anywhere from 1,250,000 to 6,600,000 germs have been found in the digestive tract of a single fly. Consider then how virulent a factor becomes the fly speck; how only a few germs (those of consumption, for example) from such a speck may within a few hours develop into colonies of many millions. Without doubt the germs of the following diseases are transferred by the housefly: Leprosy, the plague and cholera (but this is in Eastern countries, not in our Occidental civilization; we need here have no fear, by reason of the vigilance of our coast quarantine authorities). Anthrax-carbuncle (only the other day a case was reported in which the anthrax bacillus was said to be transferred by a fly upon a cat scratch); swine-plague; trachoma; tetanus; tuberculosis; the diarrhœas, the dysenteries and typhoid (to the extent, indeed, that some observers would now have us call this pest "the typhoid fly").

Here are the measures necessary to eradicate flies: Keep them away from manure; keep stables, pig pens, chicken coops clean and dry, and the animals clean; burn or bury all dead animals; attend to garbage receptacles and swill pails; burn or bury all house and table refuse and dispose properly of all miscellaneous wastes of farm or home; exclude flies from sick rooms; screen all food to be eaten; use screen, mosquito netting to windows and doors, and fly-killers in rooms; fit screens accurately; wash the hands frequently; don't buy food where flies are tolerated; get anti-spitting ordinances obeyed. Excellent fly-killers are: To place in saucers a solution of potash bichromate (a teaspoonful to a pint of sweetened water); or a solution in sweetened water of formaldehyde (two teaspoons to the pint); or burn pyrethrum powder in rooms. It is possible to exterminate flies; it is easier to do this than to get rid of mosquitoes, which latter has been done whenever persevered in. The manure heap is to the fly as the stagnant pool is to the mosquito; and the former is the easier managed.

ANIMAL CHEMISTRY IN THE LABORATORY.

ANNOUNCEMENT was recently made in the Paris Academy of Sciences of a forward step made in the chemistry and physics of living things; the laboratory creation of life was not claimed nor the transformation of inorganic matter into an organism, as was reported to be done in Vienna! But what was claimed before the Paris Academy was the laboratory production of chemical substances that are in nature produced exclusively by living things—and by the same physical process which living things employ.

About the middle of the nineteenth century Berthelot compounded organic products from inorganic matter, thus beginning the synthesis of inorganic compounds. It is now his son, Daniel Berthelot, who has made the synthesis by nature's own process — "chlorophyll assimilation," the physical function exercised by green plants in sunlight, by which mineral carbon is transformed into carbon existing in an organic state. Plants do this by feeding on air; they get the material which they transform from the carbonic acid and water vapor of the air around them. The organic compounds of carbon produced by plants serve as food for higher living beings. Without this chlorophyll function of plants, which thus assimilate atmospheric carbon, there is no terrestrial life. Daniel Berthelot and his assistant, Henri Gaudechon, consider they have reproduced this chlorophyll assimilation artificially, in all its fundamental action.

To this end these workers use purely physical means and not chemical reaction. Under the influence of the ultra-violet rays developed by a mercury vapor lamp, they have obtained exclusively from the air (from its carbonic acid and watery vapor) a number of organic compounds. There has thus been accomplished the synthesis of ternary compounds, beginning with methylic aldehyde, whose condensation gives sugars and starches; and following upon this the synthesis of quaternary compounds, beginning with formic amide: and thus are developed those albuminoid bodies which are the basis of protoplasm or living matter.

It would seem, then, that Huxley's physical basis of life has been approximated. The dividing line between inorganic matter and sentient existence has not been overstepped. Nature has still a process by which these carbon compounds enter into the colloid, automatically assimilating state; and this is the resultant of their own assimilation by the living cell. This, too, is physical, like everything in nature; but whether the process shall be eternally conditioned upon the cell itself (*omne vivum ex ovo*) is still the mystery of life—which the discovery of Berthelot and Gaudechon does not touch.

Again, while the elder Berthelot used the physical energies known to chemistry in his time (particularly light and heat), his son has successfully harnessed to the uses of chemistry such marvelous energy as was unknown to the father — the radiant energy (commonest of all in the cosmos) which nature herself uses in transforming inorganic elementary matter into organic living tissue.

THE CURIE.

BESIDES the time-honored "Ohm," "Volt," "Ampere" and like measures named after the famous discoverers whose activities have suggested them, we now rejoice to place "the Curie," which is henceforth to be the standard unit for measuring radium emanations. This important conclusion, and the decision that Mme. Curie shall prepare an international radium standard to be preserved in Paris are the main results of the congress of radio-activity and electricity recently held in Brussels.

The science of radio-activity is to-day in much the same position that electrical science was four decades ago, when every laboratory had its own standard of resistance. Close comparisons of the standards employed by various investigators in different countries has accounted for wide differences in results obtained —such as the numbers of alpha and beta particles emitted per second and the calorific emission—results dependent upon the purity of the radium standard used for reference. It is probable, by reason of the rapid decomposition of radium salts (with loss of weight and consequent increase in the proportion of radium initially present) that some provisional standards of radium used by scientific laboratories are too high and contain more than their calculated amount of radium; whilst on the other hand many other standards are entirely untrustworthy, 50 and even 20 per cent. preparations having been sold as "pure."

The first essential step has therefore been toward the standardization of radium. The new unit expresses the amount of mass of radium emanation in equilibrium with one gramme of radium element. The standard will contain about twenty milligrammes of radium, which will cost about $2,500; and a similar amount will be needed for substandards. The "millicurie," for example, would be the amount of emanation in equilibrium with one milligramme of radium element. A committee appointed by the Congress has requested the various governments to purchase the international standard when prepared.

From our viewpoint as medical men, Mme. Curie's work will have a notable effect. The custom has arisen, particularly in Germany and Austria, of expressing the radio-activity of natural waters, and the like, in terms of arbitrary units involving the use of a particular measuring instrument; and it is very desirable to replace this as soon as may be by one which shall refer the effects observed directly to the quantity of radium necessary to produce them. This will be possible immediately standard solutions containing minute amounts of radium are available.

Poetry.—Many essays have been written upon it, and in it. After all, it responds to a primary instinct of rhythm, form, and impulse.

We need some form and some conception of form to underlie our efforts. A study of verse does this. The instinctive application by the British nation of form to government may have to do with the national feeling for verse in chant and song, and the public school teaching of Greek and Latin prosody.

To cast ideas in a clear and succinct form some relation to the *stanza* and the *chorus* is observable. So, too, in Music, which in Hellenic pedagogy symbolized *form*.

Consequently, a neglect of the musical element is the cause, to-day, of our in-sensual deviation from the perfect.

To form we may add two equi-distinct principles: idea and relation, so that these stand as the chief requirements of education in salience and radix:

1. Form,
2. Idea,
3. Relation.

When these assume a spirited aspect, they become:

1. Rhythm,
2. Beauty,
3. Reason.

So that all we study must have a purpose based upon these fundamentals, or it is inchoate, loose, purposeless and a-teleogical.

A child taught to select according to the ground-plan of the preceding will naturally and of itself become educated, and will grasp and develop with effect and individuality. So that some new and valuable thing becomes ours through him.

Poetry chooses the vital and distinct. It assembles these necessities far more irrevocably than a machine may do. When it does not, it has not been poetically born.

To use versification well is possible. In some ages prose had little currency. For verse was a vehicle in our control.

Slang, to-day, is the half-brother of poetry. It is vital, suggestive and succinct as well as awakening association-chains. But these association values are too frequently crude, or ugly, so that slang is not of the elect, or "twice-born."

Poetry deserves more of our time. But where are the poets—those who can hold us, and talk to us?

The Psychology of Crowds.—What a crowd will do is a very different thing from what each of the individuals in it would do if alone; and its standards of conduct are much lower than those of its component elements.

BIBLIOGRAPHICAL

What to Eat and Why.—By G. Carroll Smith, M.D., of Boston, Mass. Octavo of 310 pages. Philadelphia and London; W. B. Saunders Company, 1911. Cloth, $2.50 net.

The author has described the fundamental elements of food and the principles underlying its use, the essential reasons why a change of the diet in certain diseases is desirable, and how this change may be made in the most practical, time-saving way, that there may no longer be an excuse, except in rare instances, for the country physician sending his patient to the city specialist to be dieted after an accurate diagnosis has been made.

The study of each affection makes it evident that the kind and proportion of food depend upon the merits of the individual case, and there is no doubt of this!

It is impossible to fix rules of diet that will suit every case, in any respect, and the greater the experience, the more the practitioner will realize the truth of this statement.

There is the greatest need for a book of this class, and while it would be impossible to produce one that could not be criticised, there is very little in this to be found fault with.

The writer is glad to say that this is the most practical and best book upon the subject, with which he is familiar, and it is unqualifiedly commended to students and practitioners, especially in the country, as it will be found to really simplify dietetic therapy.

Practical Cystoscopy and the Diagnosis of Surgical Diseases of the Kidneys and Urinary Bladder.—By Paul M. Pilcher, M.D., Consulting Surgeon to the Eastern Long Island Hospital. Octavo of 398 pages, with 233 illustrations, 29 in colors. Philadelphia and London. W. B. Saunders Company, 1911. Cloth, $5.50 net.

The importance and practicability of this subject has rapidly grown in favor in the last decade.

The Cystoscope has in many instances replaced exploratory incision, and it often affords a far more exhaustive means of diagnosis, than any other yet known.

In this book the author has stated the indications for cystoscopy and has outlined the technic in minutest detail, describing the instruments used and how to use them, presenting the practical side only. The difficulties met with are described, and the methods for overcoming them are given.

The text is based upon the author's personal observations after most careful testing.

No one interested in the subject can afford to be without this volume, which is thoroughly practical and up to date. The text is fully illustrated.

1000 Surgical Suggestions.—By Walter M. Brickner, B.S., M.D., Adjunct Surgeon Mount Sinai Hospital, Editor-in-Chief American Journal of Surgery, with the collaboration of James P. Warbasse, M.D., Harold Hays, M.D., Eli Moschcowitz, M.D., and Harold Neuhof, M.D. 225 pages; cloth, $1.00, leather, $2.25. Surgery Publishing Company, New York.

This is one of the biggest little books ever presented to the profession. In its 225 pages are found a collection of 1000 epigrammatic succinct, virile and instructive hints based upon actual experience and everyone a lesson in itself.

The Suggestions are so arranged and indexed that all subjects covered can be immediately referred to and the particular hint upon any particular subject immediately found.

The rapid multiplication of its editions shows with what favor it has been received.

Medical Jurisprudence, Forensic Medicine and Toxicology.—By R. A. Witthaus, A.M., M.D., Professor of Chemistry, Toxicology and Medical Jurisprudence in Cornell University, and Tracy C. Becker, A.B., LL.B., Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo. Second edition; volume IV—Toxicology. Octavo volume, 1271 pages, illustrated. Muslin, the set $24.00, law sheep, $28.00; sold separately, muslin, $7.00, brown sheep, $8.00. New York, William Wood & Company, 1911.

The subject of Toxicology, the science of Poisons, is a most important one, and of interest to physicians, chemists and lawyers. In its relation to crime, it is of the greatest importance. Toxic effects, moreover, are produced by a great number of substances under varying circumstances, quite independent of the realm of the Criminologist; far too many of the arts and trades of Civilization are attended by toxic results of the gravest importance. The subject is therefore, as it were, chemical, medical and legal, and a complete treatise, such as this aims to be, has to deal with all of these aspects of the topic.

The author is excellently well qualified to produce such a book as this, having devoted the major part of his life to the study of Chemistry and Poisons, and to the art of the detection of the latter. The subject is handled in the following order: First, there is a Table of Cases, giving references by page to the "causes célèbres" quoted in the book. Then, next, an introductory article, Historical and Biblographical. Following this is section devoted to General Toxicology. The major part of the book is devoted to Special Toxicology. In this section the individual toxic agents, classified into: Mineral Poisons; Vegetable Poisons: Animal Poisons, and Synthetic Poisons are each considered at length. The foot-notes are very numerous. The references contained in them have all been personally verified by the author, and give the original source of every quotation in the text. A very large Index concludes the volume.

The four volumes form a library of the first rank in the subjects of which it treats.

Health Hints and Health Talks.—By E. R. Pritchard, Secretary of the Chicago Department of Health. The greatest wealth is health. 12mo, pp. 153; fifty cents. Reilly & Britton Co., Chicago, 1911.

This little book gives valuable information in plain and simple language, that even all laymen may understand. It is worthy of universal reading and costs very little.

Disease in Bone and Its Detection by the X-Rays.—By Edward W. H. Shenton, M.R.C.S., Eng. L.R.C.P. Lond. Sen. Surg. Radiographer, Guy's Hospital. Octavo, pp. 72; price, $1.60. Macmillan & Co., Limited, St. Martin's Street, London, 1911.

The author of this little book has recorded facts here, which he regards as fundamental in diagnosis. He also thinks that these facts are not generally known,

and that clinically the X-Rays skilfully used are equal to differential diagnosis in many diseases, such as tubercle and osteoarthritis, and malignant disease and chronic inflammatory trouble in the shafts of long bones.

The radiograms selected are typical and worthy of study in connection with the text.

The work is original, on high lines, and will be found of interest by the student along its subject.

John Sherwood, Ironmaster. — By Dr. S. Weir Mitchell, Author of "Hugh Wynne, Free Quaker," "Constance Trescot," "The Guillotine Club," etc. 12mo, 316 pages. Price, $1.20 net; postage, 12 cents. New York, The Century Co., 1911.

John Sherwood is a master of men, he is also a slave of his own iron will and never lagging energy of mind. His growth from starved and drudging youth to the position of master in a great industry, his first bitter defeat when the tired body can no longer resist the inroads of disease, and he realizes he must give up the fight he loves to battle for his life—all this is portrayed with the skill and reality that are such characteristic qualities of Dr. Mitchell's work.

But, of course, Sherwood does not die, and the story of how he seeks and finds health in the Maine woods, his gradually changing outlook on life, in a broader interpretation of the art of living; and finally how, with the advent of "the one woman," he plucks supreme happiness from the heart of tragedy, constitute the main threads of a remarkably refreshing and absorbing novel.

Plaster of Paris and How to Use It.—By Martin W. Ware, M. D., N. Y., Adjunct Attending Surgeon, Mount Sinai Hospital, etc. Second edition revised and enlarged. Price, cloth, square form $1.25. De Luxe leather $2.50. Surgery Publishing Co., New York.

This book has been completely rewritten and enlarged and thus its scope of usefulness has been greatly extended.

Such information as History, Materials, Manufacture of Bandages, Storage, Bandages of Commerce, Calot Plaster Bandages, The Immediate Preparation of Bandages, Application and Precaution, Removal of Bandages, etc., are all given under the contents of The Plaster of Paris Bandages. Then follows such chapters as Application of the Plaster of Paris Bandage to Individual Fracture, Plaster of Paris in Orthopedic Surgery, etc., and all presented in such a comprehensive manner as to make this book of particular service to every practitioner interested in its subject.

Food and the Principles of Dietetics.—By Robert Hutchison, M. D., Edin., F. R. C. P. Physician to the London Hospital, etc. With plates and diagrams. Third edition, octavo, pp. 615, $3.00. New York, William Wood & Company, 1911.

This excellent, well known, and popular book, has reached a third edition thoroughly revised and enlarged.

It has been specially designed for students and practitioners and a new chapter has been added on "Certain Dietetic Cures and Systems."

The subject of patent and proprietary foods is fairly dealt with.

There is no question as to the value of this work, which has already become standard.

It augurs well for the future, to see such books multiplying, and to observe the improvements going on in this line of study.

A Manual of Diseases of Infants and Children.—By John Ruhrah, M.D., Clinical Professor of Diseases of Children, College of Physicians and Surgeons, Baltimore. Third Revised Edition. 12mo. volume of 534 pages, fully illustrated. Philadelphia and London; W. B. Saunders Company, 1911. Flexible leather, $2.50 net.

This most excellent little book has been fully revised, but the size has been kept small, in behalf of students and practising physicians. Much new matter has been added including many illustrations.

It is one of the best books for its purpose, for every day use.

Gonorrhea in the Male. A practical guide to its treatment.—By Abr. L. Wolbarst, M.D., Professor of Genito-Urinary Diseases, New York School of Clinical Medicine, etc., New York, The International Journal of Surgery, 1911.

This little book, written for the general practitioner, is an excellent guide to diagnosis and treatment, and the author makes a plea for more gentle and conservative methods, which is very desirable in every way.

Tuberculosis as a Disease of the Masses and How to Combat It.—International prize essay, octavo pp. 122. Price, 25 cents. By S. Adolphus Knopf, M.D. New York, 1911. Seventh Edition thoroughly revised and enlarged with 64 illustrations. "The Survey," 105 East 22d St., New York.

This little book, which has appeared in twenty-four different languages, and has met a popular demand, now comes to us greatly enlarged and improved.

It deserves to be spread broad-cast over the world.

The Fats.—By J. B. Learthes, M.A., M.B., F.R.C.S. Professor of Pathological Chemistry in the University of Toronto. Octavo, pp. 138. Longmans, Green & Co., London and New York, 1910.

This little book covers the physiology as well as the chemistry of fats, and is one of a series to be issued, dealing with the pure chemistry of physiological products.

Subsequent monographs will be directed to such questions as the chemistry of special tissues and particular aspects of metabolism.

These publications are of a high order and will be appreciated by the student of biochemistry.

The Nervous Life.—By G. E. Partridge, Ph.D. Formerly lecturer in Clark University, etc. Octavo, pp. 216. Price, $1.00. New York, Sturgis & Walton Company, 1911.

The purpose of this book is to point out some of the causes and conditions of the nervous life, especially those that appear to be psychological, and to suggest the principles of control upon which an hygienic regimen must be based.

It will be found useful to those who wish to study the personal problem and how to make the best use of one's energies.

The text is founded upon a broad scientific outlook, upon good common sense and is worth reading.

First Aid in Nursery Ailments.—By Emelyn Lincoln Coolidge, M.D. Author of "The Mothers' Manual," etc. 12mo., pp. 75. Price, 50 cents. New York, Sturgis & Walton Company, 1911.

This book is intended for use in the absence of a physician, and for this purpose it is excellent.

What Farmers Can Do to Assist in the Campaign Against Flies and Mosquitoes, is a reprint from the Country Gentleman, and is published by the author, Wm. Paul Gerhard, C.E., 39 Strong Place, Brooklyn, at 25 cents. It is well worth the money.

CORRESPONDENCE

SHOULD THE USE OF MILK BE RESTRICTED TO INFANT FEEDING?

To the Editor of the MEDICAL TIMES:

There are three different and distinct foods in the plan and arrangement by nature, for the use of human beings.

First, the food derived from maternal blood that is needed in the period of life and growth of the young child while it is in the womb of the mother.

Second, the food for the first one or two years of the infant, in the exclusive form of mother's milk.

Third, the solid foods, after weaning, as clearly intended for human creatures.

To this third class belong all fruits of the trees of the orchards and the woods, the sweet berries of the vines and the bushes, the grains and the plants.

Each period of human life, as it is plainly seen, has its special provision of suitable nurture. These separations in the foods for the human family are distinct, absolute and fixed, and if we trespass and take things for ourselves as food that are out of place or time, or the foods for the lower animals, or those articles not suited to us, we invite disorder, disease, infirmity and death.

I have placed milk, according to natural law, in the second class of foods, and who can say it is not the food of the infant? Then how can it also be the food of the adult? Each period of human life has special food, determined by the test of time and fitness, and, so long as we keep the law, so far are we safe and spared from infirmity. But man, noticing that milk has a pleasant taste, and that it, also, is easily swallowed, the habit of using milk for food by human adults has spread and developed.

But is it right that man should shirk responsibility, seek infant food, appeal to the cow, wear out its life to satisfy his indulgence and gratify his indolence? Each creature has its own life to live and its own reason for it; and is man to sap the cow of strength, or drain blood or milk from her veins? Is it necessitous to man?

The use of milk is now of wide extent, and the argument is made that milk contains all the ingredients for human food, this is only partially true. It contains the ingredients suitable for the life of the infant, and that is the most that can be said.

When the infant is weaned it is to depend on the fruits of the soil precisely as in the case of other animals; and may not any longer depend on the life of its own mother, or the life elements of any other animal. Such is the fixed plan of nature, as any one can see who will look.

The long continued use of milk as human food weakens the vitality of both giver and user. Milk contains too much albumen and excess of fat ingredients, so that the stomach is overtaxed and finally breaks down. The same is true of the intestines, of the kidneys, but here there is this difference. The stomach and intestines cannot fully digest the animal albumen and thus the kidneys are overworked in the effort to rid the blood of the insoluble albumen. The kidney is a limited drain, or outlet for excess. If they have too much insoluable albumen to eliminate, the result is weakness and a break-down. This is the case of such as habitually use much milk.

It would be far better if milk were used most sparingly and limited to the use of seasoning and flavoring. The vast growth in the consumption of milk has not lessened sickness and disease, but actually increased sickness.

It is also plain that the cows themselves are overfed and overmilked, to produce gain for their owners, thus causing weakness, sickness and disease in their ranks. This is the cause of so much tuberculosis in the herds of dairy cattle.

Think of it, and give a truer explanation if there is one. The cows are milked to their destruction, while the milk, so derived, is easily spoiled, unfit, and unsuited to human use.

The ground for the general public employment of milk is a misunderstanding of its nature and its use. milk surely is a food for babes and sucklings, and *not* the food for man; and by taking milk out of its place, we mock nature by our impertinence.

For this mistake there is increase in defective nutrition, in milk sickness, weakness, tuberculosis, and the fatty and the albumenous diseases.

ELMER LEE, M.D.
127 West 58th Street, New York.

THE EFFICIENCY OF BLOOD-LETTING.

To the Editor of the MEDICAL TIMES:

It is only two or three days since I wrote to the house physician at St. Luke's Hospital and requested him to get a good supply of leeches and use them freely in all suitable cases; and this morning I was more than pleased to receive your journal and read your wise advocacy of bleeding, particularly by venesection. With the purpose of the article I am wholly in accord, and not from therapeutical ideas, but from what I have seen and experienced in the early years of my professional life. When I was a student in Paris forty or more years ago, bleeding by venesection, leeches, or cut cups, was daily routine in hospital wards for a variety of ailments and in very many instances it was of unquestioned and great value. I know of nothing in beginning otitis with great pain, in acute pleuritis, in pneumonia, in appendicitis, etc., of more use than the application locally, of a few leeches Frequently they diminish, or neutralize, acute, severe pain as nothing else will. Frequently, also, they abort, as, I belive, inflammatory disease in a way that nothing else will—and even when the course of the disease is not arrested, they do no harm, certainly not nearly so much as the internal use of some drug new to us, and only desirable and vaunted because new, and destined very soon to disappear and no more be heard of. Witness what we now know and believe of acetanilid, and others of like ilk, so pernicious, or valueless, that they are now dropped by, or out of sight of, intelligent practitioners.

There are times when leeches, or cut cups, do not take the place of venesection. In a distended, rapidly failing right heart from pneumonia, or other cause,

in memic convulsions, in cerebral hemorrhage with pulse of high tension, in cerebral congestion, acute and imminent, bleeding from the arm is imperative. The leech is too slow in some such cases. Moreover, we must apply six, or more, to get the amount of blood we require, and that may be objectionable. But in other instances, and they are very many, the timely application of a few leeches will save many a life, otherwise surely doomed, and there is no drug, or local agent, which can take their place successfully.

To be useful in highest degree, the wound must continue to bleed after the leech has dropped off, and to promote the bleeding, warm, moist applications of compresses, or flannels, soaked in warm water and rung out, must be applied frequently for fifteen or twenty minutes, or even longer. It is this *slow*, twenty minutes, or even longer. It is this slow, prolonged blood-letting of the leech, which is most desirable, and in twenty-four hours the loss of blood will often be replaced, but with blood of a better quality, or composition. I earnestly trust that these words of mine may be heeded and the instruction practically applied. I am and have been contending for their purport time and again. Unsuccessfully, I grant, because the fashion of the day won't permit of right doing, except rarely and in the clearest, most urgent cases. It is none the less wisdom, and of the best sort, to counter-act, as far as may be, by word and deed, error of fashion. BEVERLEY ROBINSON, M.D.

42 West 37th Street, May 2, 1911.

P. S. Professor Dieulafoy recommends the use of leeches in the treatment of valvular diseases of the heart. (v. Last edition of his great work on Practice of Medicine).

RETROSPECTIVE

When Shall We Remove Tonsils and What Type of Operation Shall We Do?—Dr. Eugene A. Crockett, (Bost. Med. and Surg. Jour., Mar. 23, 1911) gives as an indication for removal of the tonsils an hypertrophied condition when they offer an obstruction to breathing and therefore influence proper nutrition, and in order to secure the proper formation of the jaw at the period of second dentition. The tonsil should be removed in all cases associated with enlargement of the glands of the neck, and in all cases of articular rheumatism in which the tonsil is probably an ætiological factor. These operations should be, as a rule, performed in a quiescent period, especially in the case of rheumatism, when the nervous shock and the additional sepsis should both be avoided in the acute stage. The existence of endocarditis in a more or less chronic state need not necessarily be regarded as a contraindication for operation. The tonsils should be thoroughly enucleated in all cases of repeated circumtonsillar abscess.

When they are of moderate size, not projecting more than a quarter of an inch beyond the anterior and posterior pillars, no removal is necessary, nor should they be removed under the promise to the parents that their removal will relieve the child of cold in the head or ear trouble.

In adults we occasionally see one or both tonsils very large, almost filling the pharyngeal cavity, with a history of repeated throat trouble in childhood, but with no throat infection for many years. Such a case, and it is a fairly common one, would be anything but benefited by an operation. The operative shock to adults is considerable, there is also danger of hæmorrhage. There is also the possibility in cases of persons with a well developed musical voice that the voice may be permanently injured or they may have to change the whole musical method to obtain the same good results, so that even although some tonsils are distinctly pathological, the author does not advise removal.

In doing an adenoid operation a great majority of operators remove all the tonsil tissue in the throat regardless whether it is normal or abnormal. This is contrary to good surgical procedure. It adds greatly to the shock which the patient receives and does not add anything to the success of the operation, although materially increasing the danger. The mere fact that the child is under ether for an adenoid operation should not be considered justification for the removal of tonsils if they are of normal size and there is no history of infection. If the case presents a clean history of infectious process such as circumtonsillar abscess, acute articular rheumatism or tuberculous infection of the neck, beyond question the whole tonsil should be enucleated and removed as completely as possible. This should be done by blunt dissection rather than sharp dissection. In an ordinary case of simple hypertrophy devoid of symptoms, the most common type in children, it is not necessary to remove the base of the tonsil, but a perfect result may be obtained by removing enough of the tonsil to bring it down to a normal size so as not to project beyond the pillars. This may be done with a snarx or punch or with a tonsillotome, if the operator is skillful in the use of that instrument. We should, however, guard ourselves against future trouble by warning the parents that it is possible for the child to have an acute infection of the nasopharynx without the existence of any demonstrable amount of tonsil tissue, although the child is very much less liable to such infections than before the tonsils were removed. We should also after this type of tonsil operation keep the child quite quiet for several days, and particularly in cases of adults warn the family that there is going to be a very sore throat.

Dilatation of the Stomach.—The maximum normal capacity of the stomach does not exceed 1.5 quarts, therefore enlargements above this capacity may then be said to fall under the heading of dilatation. By far the most frequent cause of dilatation is pyloric stenosis, either due to such diseases of the stomach as carcinoma or ulcer, external compression arising from neighboring organs or to adhesions about the pylorus. Other causes may also act independently of pyloric stenosis, such as the overfilling of the organ with food and drink, thus over-straining the muscular layer, chronic gastric catarrh, constitutional conditions, as tuberculosis, etc., causing a degeneration of the muscular layer, omental hernias, and gastroptosis.

The diagnosis of this condition embraces first of all the recognition of the special causes. The unmistakable clinical manifestations are the characters of the vomitus and the peculiar manner of recurrence of the vomiting. Vomiting occurs at intervals of several days, the matter ejected sometimes amounting

to 1 to 3 gallons. The ejecta often contain remnants of previous meals, are, as a rule, excessively acid, emitting a sour odor, and on microscopic examination they show bacteria, sarcinæ, and torulæ in great numbers. These, together with physical signs, are adequate for a positive diagnosis. The most important part of the treatment of this condition is rest in the recumbent position. It places the stomach in a position of mechanical advantage, especially if the patient lies on the right side. The patient should lie down immediately after eating. In slight cases for an hour after each meal, in advanced cases he should remain in bed all day until the tone of the stomach has improved. It is better for the patient to sit up during meals, as otherwise the food may stagnate and undergo fermentation in the dilated fundus, and not reach the pyloric vestibule until the next meal is taken. Abdominal massage is often very useful. It should be given every morning one hour after breakfast, gradually increasing it from ten minutes to half an hour. Electricity is comparatively of little value. The galvonic current causes a tonic contraction, and this is the most serviceable form.

Strychnine is useful as it improves the appetite and overcomes the malnutrition so often present. It may be combined with dilute hydrochloric acid if there is lack of gastric secretion.

As an occasional aperient, aloes is good, having a stimulating action on the muscle of the stomach. In cases of dilatation complicated by catarrh, lavage with plain water is of use. Not more than a half pint should be used at a time. This is preferably done at nights. A little nourishment such as a glass of milk, may be given after.

On the Injection of Drugs, Especially of Salvarsan (Ehrlich) into the Lumbar Muscles.—Dr. Q. J. Meltzer (Med. Record, March 25, 1911) reports his experience in twelve cases with the intralumbar injection of salvarsan. The curative or healing effect of the remedy when applied by this method was apparently, to say the least, not less prompt than that observed after other methods of administration, secondary and tertiary manifestations disappeared in a surprisingly short time. For instance, a woman with papulomacular eruptions over the entire trunk and limbs, and mucous patches in throat and mouth received an injection of "606" in the lumbar region on November 3d, and on November 9th it is reported: Eruption almost entirely disappeared; shows only a copper stain. Throat no longer red and sore. Regarding the Wasserman reaction, he obtained information only in seven cases. Of these, in six the reaction became negative and in one it remained positive. In ten out of the twelve cases no palpable reactions followed the intralumbar injection, and among these were some lean people in whom any abnormal infiltration would have easily been discovered. Of the remaining two cases, in one a moderate œdematous swelling in the lumbar region followed the injection, which completely disappeared. No information was received regarding the twelfth case. Salvarsan was administered in most of the cases as a weak alkaline, fine suspension, and in a few instances alkaline solutions of the remedy were employed. In eight of the twelve cases the injection of salvarsan caused no pain worth speaking of, neither at the time of injection nor any time later.

The author gives the following résumé: "The sacrospinal muscle presents anatomically an exceptionally well isolated large compact mass, densely packed with fine muscle bundles. Any solution or suspension injected strictly into this mass will remain there and not affect locally the adjacent tissues. Experimentally it was shown that the absorption from this muscle is superior to that from the gluteal muscles, and vastly superior to that from the subcutaneous tissue. Clinically it was established in a limited number of cases of syphilis that salvarsan injected into this muscle exerts a fairly rapid, unmistakably beneficial influence upon secondary and tertiary manifestations of syphilis and upon the Wasserman reaction without causing pain and other ill effects deserving any serious considerations. It seems that the lumbar method of injection deserves a critical trial by careful observers for salvarsan as well as for other drugs.

The Influence of Frequent Small Doses of Chloroform.—In order to find out the effect of repeated small doses of chloroform, experiments were undertaken at the physiological laboratory of Glasgow University by Dr. G. Herbert Clerke. Rabbits were used in the experiments and lozenges containing chloroform were given. The summary of the investigations was as follows:

1. Chloroform repeatedly administered by the respiratory passages, subcutaneously, and by the stomach in small doses rapidly kills rabbits. 2. The liver shows degeneration of the cells sometimes so marked that the whole center of the lobule is broken down into débris. The cells in the center of the lobule are early affected, those further out later. Fat is always present, generally in large quantities. 3. The kidney suffers to some extent, but relatively more when chloroform is inhaled than when it is injected or given by the stomach. Fat is occasionally found in degenerated cells. 4. The spleen shows intense congestion, the sinuses being packed with red blood corpuscles, and along with the red corpuscles an orange-colored pigment is generally present which reacts to the stain for iron. Very many large phagocytes are present in most cases. The average weight of the spleen was 0.46 gram heavier than in the controls when chloroform was inhaled and 0.59 gram and 0.17 gram heavier than when injected and when given by the stomach respectively. 5. Degenerative changes were observed in the cardiac muscle. Fat was not observed in any of the hearts examined. These experiments show that the effect on rabbits of small and repeated doses of chloroform is in a high degree injurious. The same, undoubtedly, holds good for children and adults. The above report appeared in the Lancet, January 21st.

Deafness.—The condition of reduced hearing owing to chronic myringitis and sclerotic changes in the ossicular transmitting apparatus is similar to the ocular defect of cataract in the veil-like obscuration of function. We seem to be able to cut out the cataract. Ashhurst, long ago, told of repeated attempts to incise and excise the tympanic membrane. In addition to

this, solutions were washed through the middle ear. Experience with the application of oils to the stiffened ear-drum leads me to think that these solvents are helpful and would prove more so if the applications could be given directly to the ossides. Some precipitation of the hydrocarbons in the parenchymata of the conducting media seems to be the cause of supercalcification. Indeed, the changes are similar to those of ossification and arterio-sclerosis, indicating an irritant, a fat-precipitation, and a lime-precipitation.

This is analogous to the normal reaction of cells to irritants. If allowed, a contractile response follows an irritant, or stimulus. This contractible response implies carbohydrate changes in aggregation and structural grouping. An irritant carried too far, on the other hand, would cause an extrusion of the carbohydrate material, as in the mucus of epithelial cells, which cannot contract. But the final stage is that of excess irritation with *fat* extrusion, as in atheroma and the prodromes of sclerosis, generally.

The practical reversal of this chain would seem to be in the administration of fat, to overbalance the waste or extrusion. For the surplus fat, as food, may decrease the irritant or frictional factor.

However, as this may be, it seems reasonable to believe that a good oiling of the chain of ossicles and gentle manipulation might accomplish something. An electric vibrator, or even a faradic current, might accomplish something.

Ashhurst says that benefit does accrue from openings made in the ear-drum, but does not persist. The opening heals over. The chain of ossicles, however, could be *moved*, during this happy interval.

Such treatment should be worth a trial, for the unfortunates with good nerve conduction seem pitiably neglected.

Economic Aspects of the Woman Suffrage Movement.—People will always desire, need, and obtain 1, Houses; 2, house-furnishings, and clothes; 3, food; 4, amusement; 5, medicine; so that it follows that the sources of wealth on the part of any community will lie in the production from soil or raw material of objects of worth.

We, then, see certain groups of wealth producers: 1, Farmers and cooks; 2, miners; 3, weavers; 4, builders; 5, manufacturers; 6, entertainers, teachers; 7, healers; 8, mechanics.

A recognition of the need of reinforcing the prime groups of constructive workers must be maintained, in order to secure a balanced social organization. When a community becomes "poor," that is, turns to exchange or transference of articles of value, rather than the creation of distinctive new ones, as happens not infrequently, a period of stress results.

Miners, agriculturists, herdsmen, weavers and woodsmen are needed to-day. To have more of these would reduce our percentages of insane. The effect upon the mind of production is strengthening.

The weaving we have is one of the weakest in the world. We need hand weaving, designing and special manufacture. Such production would inure to a wonderful advantage. We need fine cloths for dresses, for wall-hangings, and for floor coverings. Fine, but simple, so that expense would be remunerative, but not prohibitive.

We need more farming, and the creation of preserved food products, for seasonal distribution. Anything to eat, that is not prohibitive, will find a ready market.

When men and women ask what they can do, on account of our defective school-system, which teaches them little or nothing of creative sort, we need a social bureau to help out with information of the kind which will lead to creative work.

Plague and the Mormot.—Dr. Morrison of the *London Times*, who is investigating the plague in Manchuria, states that the mormot is known to the Mongols by the name of tarbagan, and exists in immense numbers in the country traversed by the Manchurian railway. This rodent is subject to that form of plague which is associated with the respiratory tract. The tarbagan hibernates from October till April; it is attacked with plague in September and October. Those that die perish in their burrows and there infect (precisely how is not known) the succeeding generation that resorts to the same burrows in the next hibernating season. It is hunted in April, May and June; it breeds in July and August, and is again hunted in the weeks preceding its hibernation. For years plague has been endemic among these rodents; Mongols and Buriats, who formerly hunted them for Russian dealers, could tell what animals were infected, and these they left severely alone. But when the trade assumed increasing importance and demand for skins increased in Europe, then Chinese were attracted to the chase. They came in hundreds, and then in thousands; they had no experience and, being ignorant of the plague, they handled the plague-stricken, and were infected. The manner of their infection is still undetermined; but evidence points to direct inoculation in the process of skinning. There is as yet no available evidence that the mormot had bubonic plague nor that it was the host of a flea or other blood-sucking parasite. Hunters live upon the flesh; but direct intestinal infection is believed not to occur. While the hunters are afield they do not suffer from the plague; the disease only manifests itself when they come back for the winter.

Cancer Mortality.—Dr. Walter B. Chase (Jour. A. M. A.) says: A recent writer, after compiling statistics of the mortality from cancer in European countries, and basing his comparison on population, asserts that there are 80,000 cases of cancer in the United States with a yearly mortality of 40,000. It is difficult to obtain from reliable statistics the average duration of cancer of all varieties. It is, however, believed to be a conservative estimate that the average duration of cancer is three years. On this basis it would appear that at this time there are about 225,000 cases of cancer in the United States. The fact remains, however, that according to the best analysis of statistics attainable, there is a yearly mortality from cancer in the United States of 75,000. In this connection it must be remembered, first, that cancer is not usually (if ever) in the lists of diseases which boards of health require to be reported. This being the case, not all cases of death from cancer are reported as such. Some individuals and families are averse to having the cause of death known and it is not accurately reported, the death being attributed in death certificates to some other cause.

In the second place, doubtless a very considerable number of cases of internal cancers and tumors in vari-

ous parts of the body are never correctly diagnosticated, and are never included in mortuary tables as such. Thirdly, as the census was taken nearly nine months ago, the natural increase in population would tend to correct any overestimate of the mortality from cancer for 1910.

The Nature of Epithelial Diseases.—It is a simple matter to see in epithelial structures certain elemental changes.

1. Fatty infiltration or degeneration, due to excessive irritable changes, as in secretion, excretion, or conduction.

2. Mucoid degeneration, including catarrhal discharge of mucus, and due to the efforts of the cell to respond to irritation. Contraction being impossible, the mucin represents the extrusion of cell tissue, proteid, carbohydrate and water.

3. Cloudy swelling, a retrogression due to parenchymatous injury.

4. Tumor. Benign, if the axis of epithelial reproduction is parenchymatous, or one preserving the tissue cell-wall equation of surface tension; and malignant, if the axis loses this social restraint. In cancer, each cell or group of cells is organically possessed of a new axis, or equational plane.

Along these four lines the underground of pathology lies, and the secret of all therapy.

Every organ which depends upon epithelium (from either ectoderm or entoderm) can be seen to grow ill along one or other of these fundamental deviations from the normal.

The Prophylaxis of Malaria.—S. Harris (J. A. M. A., November 26, 1910), whilst urging that measures for the destruction of anopheles and of their breeding places be employed to the fullest possible extent, maintains however, that the most important and most practical agency in the crusade against malaria, is the radical cure of the patients who are harboring the plasmodium. Every patient cured means one less focus of infection. Moreover, there are malaria carriers as well is there are typhoid carriers; and one is as dangerous to the community as the other. The patient with the parasites of malaria in his blood may infect mosquitoes and transmit the disease to others, just as in yellow fever. Besides, though malaria is not so virulent or so acute as yellow fever, it may be quite as serious a disease.

A campaign against malaria should be instituted; it offers the most brilliant results of any of the public health problems now confronting us. The chief factor in this campaign should be education of the medical profession, because physicians as a class, especially those living in malarial districts, do not appreciate the seriousness of the disease, or the ease with which it may be eradicated. Next should the public be educated, by means of popular addresses and literature. Malaria, being both infectious and contagious, should be a reportable disease; and State and county health boards should lead in the fight. Municipalities, counties and States should, if necessary, furnish money to purchase quinine for the cure of indigent sufferers; and to destroy the anophelines and their breeding places.

Philanthropists should be urged to help fight malaria, one of the greatest enemies to mankind; money spent in eradicating malaria (considers Harris) will yield greater returns than any other philanthropy.

Better Pay the Doctor.—The very sensible Mayor Brown of Kansas City, Mo., ordered the employes in all the civic departments not to contribute to any funds for the purchase of Christmas gifts for persons higher up. Here is a custom which seems to prevail in many communities—a most objectionable one, taxing as it does most unduly the means of small salaried men. Only infrequently does it rise above the level of politely diagnosed blackmail. In the opinion of the excellent Mayor subordinates in municipal ordinances, whose incomes were levied on for contributions, have given practically under compulsion, and have in most cases believed that only by giving could they obtain or retain the friendly interest of those to whom the presents were made. The very scrubwomen in some public buildings have not escaped assessment. "The clerk who is struggling to pay a long standing doctor's bill devotes part of his income to a silver tea set either to escape the ridicule or condemnation of his associates, or else in the conviction that his job will be insecure if he refuses to chip in."

Rickets.—A conception of the nature of Rickets has been outlined in the Paris médical, 21 January, 1911, by A. B. Marfan, who says, the bony changes in rickets are the outcome of reactions which are determined by chronic infections or intoxications in the bone marrow and the ossifying cartilages, during the final period of intra-uterine life, or in the early two years extra-uterine existence i. e., at a time when the reactions of the marrow are very sensitive or at a point at which the ossifying process is most active and most easily interfered with. Marfan indicates the several common infections as: alimentary intoxications, summated intestinal infections, syphilis and tuberculosis, chronic eczemas, pyodermatitides of a chronic or summated course. A prolonged bronchopneumonia may cause these osseous changes, such a bronchopulmonary condition as follows Pertussis.

Artificial milk-feeding is a predisposing cause. Is this a matter of calcium exhaustion? The writings of Auld of Philadelphia consider most important the question of calcium depletion.

Arthritic families seem, also, so predisposed.

Rickets lays the subject open to intercurrent illness.

Sebarel, Baudouin, Feuillé, and Marfan have contributed extensively to recent literature regarding this condition, and Denucé, in 1908, spoke at length upon the sea-side treatment of it.

Pneumonia Plague.—H. P. Sleigh (Brit. Med. Jour., Mar. 12, 1910) reports four cases occurring nearIpswich, England. Many rats were dying in the neighborhood; and these, as well as a hare and a cat were on bacteriological examination found to have had plague. Moreover, five years ago eight persons, of whom six died, were similarly attacked near Ipswich; there seems no doubt these also were plague cases. All the cases occurred at a point on the River Orwell, exactly opposite to which ships anchored to lighten their cargoes into barges before proceeding up-river to Ipswich; rats might thus easily swim ashore from the ships at this point, and it would seem no mere coincidence that rats in this region have been proved bacteriologically to have plague. It would seem, moreover, that since the eight human cases five years ago there has been much plague among the rats in that district. With regard to the

recent outbreak of four cases all contacts were quarantined for ten days; the patients' houses were thoroughly disinfected; and rats over a wide area were destroyed.

Medical Scrap-book.—The busy doctor will laugh, or feel provoked, if he is told to take time for a scrap-book. The great value of a collection of items arranged in some order ought to stimulate us and overcome the natural inertia which all bodies, anybodies and somebodies have particularly in evidence when a suggestion of method or manner is attempted.

Do not wait, my dear fellow, if you have any subject in mind, but begin with some convenient receptacle and classify all the items which are related to the matter you are following. An excellent general classification is one based upon the branches of medicine. So that the Morphology, Bacteriology, Chemistry, Therapeutics, and Hygiene of any topic may be so divided. By pasting the items upon thin card-board of uniform size, a card-index is self-constituted.

Many a physician will recollect portions of formulas, fragments of suggestions, and the tail-ends of ideas—exasperating and hopeless, unless a large reference library is at hand in which to trace the missing elements. But a small set of drawers, and a stock of patience, together with a very moderate expenditure of time, will produce its own reward. The carefully arranged cards of reference offer very interesting and helpful suggestions—hours of reading, and a timely relief in emergency.

Vulvar Pruritus in Diabetes.—Paul Carnot, in Le Progrès médical, 28 May, 1910, considers the treatment of this distressing state, and shows us how much can be accomplished by very simple treatment. In the first place, the diabetic urine in its course is responsible for the vulvar irritation and the erythema. By vaginal injections of brewer's yeast the residual urine is relieved of the sugar. Bicarbonate of soda is given by the mouth. General diabetic treatment is instituted. Remember to keep the vulvar lips apart, and always after urination clean and apply suitable lotions or ointments.

It is surprising how successful this treatment will prove. Carnot describes a recent case. He explains the efficiency of similar methods in other diabetic ulcerations, as in the mouth, or in cases of skin ulceration. Without doubt the local applications of brewer's yeast should be strongly advised. Very simple treatment of this sort has been the means of relieving cases distressing both to the patient and his doctor.

Hydrothorax (dropsy of the pleura) is a non-inflammatory transudation. The fluid is clear; there are no flocculi of fibrin; the pleural membrane is smooth. Hydrothorax is secondary to diseases which may cause dropsy—lepatic, cardiac, renal, pulmonary, hæmic, and to cancer. The lesion is usually bilateral; sometimes unilateral, right-sided in cardiac disease and with pressure on the azygos veins. Hydrothorax is often overlooked; since the exudation is not usually excessive. The symptoms and physical signs are those of pleurisy with effusion, except that the onset is gradual and there is no pain or fever. The diagnosis is established by aspiration. We treat the cause; we give saline purges and diuretics; we aspirate, repeating the operation if necessary, especially when there is marked dispepnœa.

Immunity is the power of cell and tissue resistance to the action of pathogenic bacteria; it may be natural or acquired. *Natural immunity* is this resistance, natural, inherited, peculiar to certain groups of animals, but common to every individual of those groups. *Acquired immunity* is this resistance acquired: (a) By a previous attack of the disease caused by the bacteria; (b) by the person being made artificially insusceptible. The conditions giving immunity are: (1) a previous attack of the disease; (2) inoculation, with small quantities of bacteria, so as to produce a mild attack of the disease; (3) vaccination; (4) the introduction of antitoxins; (5) the introduction of the toxins of the bacteria. *Active immunity* follows an attack of a certain disease and secures immunity for that alone; or it follows inoculation of a virus weaker than necessary to cause the typical disease; or it follows inoculation by bacterial products apart from the organisms themselves. *Fassive immunity* comes from the use of a serum derived from an immunized animal, and injected into one not immune.

Dark Skins and Malaria.—The *Lancet* notes the statement, "on the anonymous authority of a well-known London doctor," that blackness of the skin, however produced, protects against malaria. The diffident gentleman in question advises that "if you are going to a country where malaria is rife stain yourself all over with walnut juice or black yourself with burnt cork and you will be less liable to catch the disease." The explanation is given that the browning of the skin prevents the actinic rays of sunlight penetrating the cutis and so keeping the malarial plasmodium to mature; therefore, if whites had artificially colored skin or even wore black underclothing they would equally with the dark-skinned man be measurably protected against the maturing of the malarial parasite. The *Lancet*, however, makes light of this idea and, we think, justly; and it declares that "the immunity of the savage races is probably the result of evolution by selection." We would hold, rather that such immunity is natural, and acquired through successive inoculations through many generations.

Tuberculin in Pulmonary Tuberculosis.—Here is a valuable therapeutic means, the effect being best evidenced by permanent good results, a larger proportion of cases which lose bacilli from their sputum, and relief from toxic symptoms, especially in chronic advanced cases. Tuberculin, states J. A. Miller (N. Y. Med. Jour., July 23, 1910), is harmless in proper dosage. No one preparation possesses any material advantage over others. The clinical method is the most practicable guide for its administration in pulmonary tuberculosis; and the aim should be to produce no general reactions. The time element in treatment is more important than the absolute dosage; the latter varies with every case, the former is never less than six and often more than eighteen months. This method of treatment is quite as applicable in the office and the dispensary as in the sanatorium.

Smoking Automobiles.—Fines are being inflicted—and collected—against drivers of automobiles who permit dense smoke to issue from their exhaust pipes in any of the metropolitan thoroughfares. Health Commissioner Lederle has within two months obtained convictions in 450 out of 520 cases; in one day 25 arrests were made, and in all but one of these cases the driv-

ers were convicted and fined. Such bodies as the National Highways Protective Society are behind the New York City Health Department in these prosecutions, which are commended by all decent motor car owners. Possibly there are other municipalities throughout the state that are afflicted in the same manner by this nuisance, which like all nuisances, is a menace to communal health.

Infection and the Sunday School.—Dr. F. L. Mann, medical inspector of the public schools of Poughkeepsie, is reported to consider that the Sunday school is largely responsible for the spread of contagious diseases. It appears an epidemic of pertussis in that city was traced to a Sunday school attached to one of its Methodist churches. Dr. Mann finds as many deaths from whooping cough as from measles or scarlet fever, and urges measures to protect Sunday school pupils. It is not the child at school, but the baby at home, that dies. "The same children that are barred from the public school because of contagious diseases are permitted to go to Sunday school. In most of the latter the venilation is much poorer than in the public schools, and the diseases are thus quickly spread." When the Sunday school authorities co-operate with the public school authorities the number of contagious diseases will greatly decrease. Dr. Mann has traced the epidemic in question to a given Sunday school, most of the cases being among children attending it.

Clean Bakeshops.—The New York Factory Law, as amended in 1906, attacked uncleanliness in bakeshops: Its provisions required walls and ceilings to be whitewashed every three months; toilet arrangements to be provided; woodwork to be frequently painted; the workrooms to be so disposed as to furniture and utensils that they can be readily cleansed; cellar bakeshops of less than eight feet to be abolished; ventilation to be provided, and no bakeries to be used as sleeping rooms. This law permits the summary "sealing" of ill-ventilated, ill-drained and insanitary bakeries. This is a good law by which constant cleanliness (which does not by any means always obtain in bakeries) should be enforced; provision should be made for an adequate force of inspectors to this end.

Feminine Athletics.—The physical directors of woman's colleges have now an excellent opportunity to note the powers of endurance displayed by young women athletes; and this opportunity has at any rate been seized by Dr. D. A. Sargent of Harvard, who has made some important observations. There is, for example, the case of Miss Rose Pitonoff, who swam twelve miles to Boston Light in water ranging from 49 to 59 degrees, and later repeated the performance from New York to Coney Island Light—on each occasion without the slightest ill effects. In the swimming at Boston this fifteen-year-old girl made over 14,000 breast strokes at a rate of 39 to the minute, without rest or change. It is probable a trained male swimmer (assuming he could accomplish the feat) would be incapacitated for days after; yet this young woman suffered no physical lameness or fatigue. It has oftentimes been observed that the "weaker sex" are more enduring than men. Their usually lighter dresses testify that they can better resist cold.

The Night and Morning Cold, or semi-influenza, is among the latest maladies suffered by Londoners; this is described as a "half-hearted sort of influenza that does not seem to be able to make up its mind to get to business." Sufferers state they feel it only during the early hours of the day, and at night time. Dr. Forbes Winslow explains this affection by assuming that if he went out without an overcoat by mistake, he should consider himself in for a bad cold and would presently begin to sneeze and cough; but if he had no time to think of the missing overcoat, there would be no danger of the sneezing and coughing, into which he would otherwise worry himself. It is the same with those who experience "colds" in the morning and evening, whilst feeling perfectly well during the remainder of the day. People are too busy to think of themselves in the daytime and consequently their cold vanishes; "but directly their mind is unoccupied, and they begin to consider themselves again, they remember the cold and by the mental suggestion bring it on once more."

Alcoholism Cured By Operation.—We learn from the *Texas Medical Journal* of an operation devised by Dr. J. W. Kenney, of San Antonio, for the drink appetite, which the patient suffered by reason of a lesion of the jejunum. Dr. Kenney has removed this part of the intestinal canal in seventeen cases, in every one of which (except two, which proved fatal) there was recovery and complete cure of all desire for intoxicating liquor. The drunkard, it seems, usually lays the cause of his drinking to his stomach; he seldom blames a taste for liquor. In the stomach will also be found the first evidence that the physical basis of life—protoplasm—has been injured; and the physical structure of that organ is the first to present pathological conditions. Alcohol stimulates for a brief period the action of the senses and organs. This supranormal is quickly followed by an infranormal, which indicates a partial paralysis of the nerve ends and mentally of the nerve centres. Continued repetition of this process results in hardening and partial paralysis of the gastric muscular coat, and an inflamed or ulcerated condition of the mucosa. Such a condition produces a vitiated appetite and impairs gastric action—the most important of all digestive processes. To relieve this condition when produced by any agent other than alcohol, surgical measures are demanded. Why not apply the same principle in the alcoholic? Such are the views of our Texan colleague.

Seidlitz Powder and the Vine.—It would not at first thought seem reasonable that Seidlitz powders should be dearer just because of the failure of the vines in all European wine producing countries; yet several drugs and industrial chemicals dependent for their production on the juice of grapes are said to have materially advanced in price. Medically, the important of these are cream of tartar and tartaric acid; the former is deposited during the fermentation of grape juice and from the lees of wine. By reason of the shortage of supply the price has been steadily advanced. Cream of tartar, besides its medicinal use, is an ingredient of baking powders; tartaric acid, which is made from cream of tartar, is, besides its use in medicine and in non-alcoholic beverages, used in various manufactures.

Scarlatina of Unusual Type.—A man aged 47 years, after an ankle injury, but having no syphilitic or alcoholic history and having received no drugs, (as iodoform) suddenly developed a headache, backache, and then a scarlatiniform erythema. Letulle describes two

forms of atypical scarlatina, which are both abortive. In both, desquamation occurs; one, fever is present and the eruption; in the other, little or no febrile period, and Damaschino reports a case terminating thereafter directly in desquamation. Maurice Gérard, L'écho Médical du Nord, March 7, 1909, describing the foregoing case, says it falls into the category of that given by Damaschino. The age of the patient, 47, adds to the importance.

Transmission of Tubercle Bacilli.—J. R. Mohler and Washburn, of Washington, report very interesting facts which are taken up by Calmette L'écho Médical du Nord, October 30, 1910. Bovine tuberculosis may be passed on to chickens, while birds are able to transfer to horses, sheep and pig, especially when these animals are young, lesions of tuberculosis identical with those of bovine origin. Calmette emphasizes Koch's recent statement that man most often contracts tuberculosis from man by bacilli freshly derived from pulmonary discharges.

Radium as a Specific in Giant-Cell Sarcoma.—Robert Abbe, of New York, has conducted many experiments with radium, and will be remembered for his skilful recovery of the contents of a tube which exploded, scattering its precious contents upon the carpet. How he took a sensitized plate and laid it over the carpet, gaining an impression of the place, and enabling him to "encise" that portion of carpet, and so to recover in practical entirety the radium salt will prove a good example of his skill and readiness. In the Medical Record of January 1, 1910, Abbe reports eleven cases of giant-cell sarcoma. The ages of the patients are: 59, 52, 30, 65, 22, 7, 17, 86, and three not indicated. Success was uniform.

Local Treatment in Diphtheria.—Martin and Dopter (1905) proposed the use of pastilles of dry antidiphtheritic serum. In a series of seventy-five cases, Dopter gives cultured reports showing fifty-two true cases, and of these the disappearance of bacilli from the mouth was noted in two or three days. It must be added, however, that the diphtheria antitoxin was also administered hypodermically. Sicard adjoins 3 cases.

Thévenot (Lyon) in the Province Médical, September 24, 1910, unites all the results, and claims the advantages which can be obtained in conjunctivitis, coryza, and sore throat by the employment of local applications of dried serum. (Journal des Praticiens, October 29, 1910.)

Double Pregnancy in a Case of Double Uterus.—Occurred in a woman of 27, says Stern (Journal des Praticiens, November 5, 1910). On the fear of abortion, or eclampsia, hysterectomy is indicated. In this case one tube and one ovary was joined to each womb. One was cystic, the other normal; the former was excised. Such conditions arising in general practice are puzzling. At first thought an extra-uterine pregnancy was suspected. This was not realized on surgical intervention; however, it is not censurable, in the light of rarity of the condition found, and the difficulty in establishing its presence, non-operatively. Five instances of double uterus are reported by Morestin, Stern and others. Perhaps this condition occurs more commonly than is generally supposed.

Killed By Folding Bed.—A recent death by reason of a folding bed shutting up like a box trap is of a sort rare nowadays; though such fatal accidents were not infrequent when this form of bed was first sold. It seems that the victim's neck was broken and that he died eleven hours after the injury; his wife was caught in like manner and was nearly smothered when help came. It would seem those unfortunate people had failed to set the locking device intended to keep such beds from shutting up. The husband tried to scramble out, but succeeded only in toppling over the case into which the bed shuts when not in use. He was thus guillotined by the coming together of the side of the bed and the edge of the case.

Bellevue Jammed.—During February last this institution was seriously overcrowded. There are 1,230 beds; one day the census was 1,304; at times many wards were so crowded that patients lay on stretchers in the corridors and springs a few inches from the ground. Bellevue's charter forbids it to turn away patients; she transfers patients to Blackwell's Island institutions, but these latter have also been overcrowded. Moreover, medical and surgical patients cannot be put in the same wards—a proceeding highly unhygienic and confusing.

The Mental Nurse, recently declared Sir James Crichton Browne, is by reason of her training well fitted for wifehood and motherhood; and the asylum nurse is a very superior person, largely on account of the educational facilities she enjoys. Along with this compliment he paid a rather left-handed one to the British peerage: "If the scions of our nobility must needs descend from their pedestal and seek wives in lower and larger circles than their own, I recommend to their attention asylum nurses, who are accustomed to mental foibles and would make more useful helpmeets than Gayety girls."

Craniectomy as a Decompression in Cerebral Tumor.—Babinski shows the advantage of this in early cases, before vision is wholly destroyed, although afterward the headache and intellectual weakening may be relieved. Two important cases are detailed. In the second of these a double operation was needed. For after the first intervention, a cerebral hernia accompanied by hemiparesis occurred, and the second intervention was necessary and proved successful, lumbar punctures namely restoring function. Cure. Journal des Praticiens, 29 October, 1910.

Snakes and "Rats."—It is reported from Richmond, Va., that a young woman was bitten several times by a young moccasin snake which had nested in that clump of hair known to fashion as "the rat." While at work her head began to pain her; several small swollen splotches appeared on her scalp, when she removed this appendage at night. The mother, taking up the "rat" and on squeezing it, finding something wriggling inside it, tore it to pieces—when a six-inch moccasin dropped to the floor.

A Suggestive Death-Rate.—Chicago's death-rate is reported to be increasing, despite scientific advancement toward prevention of germ diseases. Death from diphtheria, croup, bronchitis, typhoid fever and children's diseases were reduced to a minimum during the last decade—but there has been a gain in death by heart disease, cancer and Bright's disease, affections over which preventive medicine can, of course, have no control.

MISCELLANY

Honora Medicum Propter Necessitatum is good Scripture; which the N. Y. Medical Journal has well translated: "Give the doctor his honorarium, for he needs the money."

Duhring's Disease.—An instance of this rare disease noted by the Philadelphian, Duhring, is recorded by Balzer and Sevestre, Progrès Médical, 13 February, 1909.

Splenic Echinococcus: Diagnosis by Deviation of Complement. — Operation, Cure, and Hematologic consideration of this case are given by Rist in the Progrès Médical, 23 April, 1910. A differential had to be made from true splenomegaly.

Curettage and Immediate Radiotherapy in Epithelial Cancer.—In Brocq's service, 11 cures were obtained in 36 cases by a single sitting and "6 H" exposure. In nine instances two sittings of "15 H" were needed.

Facio-scapulo-humeral Type of Progressive Muscular Atrophy.—Landouzy reports a case of this Landouzy-Déjérine variety of myopathy. Academy of Medicine, Paris, 23 February, 1909. It is always interesting to see the veterans gathering in their cases, and adding to their well-won laurels.

Tuberculin.—If exposed for five hours ceases to give any reaction in the tuberculous guinea-pig. But if this tuberculin is heated for 30 minutes at 134° C. it will regain its effects. Tuberculin exposed in a vacuum is destroyed more slowly than if exposed while in air. Progrés Médical, 12 November, 1910.

Wounds of Spleen.—Auvray gives us 95 cases of these, 3 had been studied by Guilé. A horizontal incision is to be made and furnishes a good view. Prognosis is grave; 55 per cent. die. Thévenot says mortality lies at 45 per cent. Severe wound of spleen, as by a revolver, gives little significance. There is internal hemorrhage, with shock, and the abdominal wall appears sunken. (Journal des Praticiens, November 5, 1910.)

Vaccine Therapy, declares H. W. Stoner (Am. Jour. Med. Sc., Feb., 1911) should only be employed (a) in general infections after blood cultures have been made and the infecting organism identified; and (b) in local infections in which the organism has been isolated and identified, or in which the symptoms are so worked that a mistake in diagnosis is beyond a possibility.

Balneological Note.—In the future there will probably be little reluctance to bathe on the part of the patients in the Lansing, Mich., city hospital. The chief of police has sent to this institution all the liquor contained in the vaults of the police department, every nook of which was filled with the stuff confiscated from the inebriates. The hospital superintendent is said to have ordered the liquor to be used in the baths of patients; now there is daily scramble to be clean.

Our Statistics the Best.—Dr. R. van der Borght, President of the Imperial Bureau of Statistics of Germany, has been visiting us in order to get really new ideas regarding statistics. He has found the systems in vogue in such cities as Vienna, Paris, Berne and Christiania, like those of Germany, not sufficiently modern, involving much labor and expense, the tabulating being done mostly by hand. He has found our country far ahead of all others in the use of adding and tabulating machinery; of especial interest and profit to him was the Census Office in Washington.

Intravenous Injections of Salts of Radium.—As with every new therapeutic force, every imaginable application is tried, and out of this "erfahrung" comes the knowledge which gives use.

From Paris, Journal des praticiens, 7 May, 1910, we read from Bouchard's note that Domenici Petit and Jaboin are employing, upon horses, intravenous injections of radio-active materials—salts of radium—which they claim to be innocuous. Six months after these injections of insoluble sulfate of radium the blood can be found demonstrably radioactive. The effect upon the animal is tonic; no inconveniences are reported.

Human Bodies as Targets.—The German government has caused its soldiers at target practice to fire at human corpses for the purpose of accustoming them to aim at human beings; when this procedure was objected to it was declared that this shooting was by way of experiment made on bodies destined for dissection at the hospitals to test the results of rapid fire. These experiments were considered necessary "in the interests of humanity to enable surgeons to study wounds."

Child Mortality in the Streets.—During the month of April last twenty children were killed in the streets of Manhattan Borough, and forty-five in Greater New York. Many more were injured. This number of street fatalities and accidents among children is the largest of any yet recorded. It would seem (contrary to a perhaps general impression) that the drivers of wagons and heavy trucks in the congested districts are mainly responsible; only one-fourth of street accidents are now chargeable to automobiles.

"The Perpetual Dance of the Molecules of Matter" has been subjected to ocular demonstration by Prof. R. A. Millikan in the Ryerson Physical Laboratory of the University of Chicago. By suspending minute drops of oil in air rarified in a vacuum chamber, they are seen to be in violent motion, bombarded by flying air molecules. These molecules are impelled by the electrical charges of their atomic parts, and their force has been accurately measured by Professor Millikan: "The act of ionization itself is now being studied, each of the two electrical fragments, in which a neutral molecule breaks up, being caught upon oil drops at the instant of formation."

Gorky. — Maxim Gorky, the novelist of Russia, writes in such a clear, direct style as to constitute him the busy man's writer. By the same token, he belongs to us doctors, and by another token, that of psychology, he is ours, again.

His novel, "The Three," is a superb lesson in literary construction, and an equally superb lesson in the possibilities for good and evil in the life of youth amid our "civilizing" influences.

But in it—

Where is religion?

Where is art?

Where is physiology?

These three are needed by the Russian three. I mean, the factors of art, religion and physiology must be brought to bear by us as greatest common denominators in order to achieve any worthy thing.

MODERN METHODS OF DIAGNOSIS.*

BY G. H. LEADER, M.D., CUBA, N. Y.

WHEN this subject was first suggested to me, I thought I would roughly cover many of the newer methods now in use to aid in the diagnosis of certain pathological conditions, but upon second thought, I have decided to limit myself to one phase this afternoon and will deal only with the subject of Urinalysis as it is now done. While I owe the Society an apology for changing my subject, I hope by so doing that the paper may be more interesting and of more practical value.

Of course, we all do not have well equipped laboratories in our offices, nor have we all the necessary technical training to do all kinds of researches in this line, but I shall try to limit myself to those things which can be done by all without any great outlay of money.

The practice of medicine is now a science and not an art as it was a century ago, and to prescribe a drug scientifically, one must not only know its therapeutical value, but must be sure that the case in hand is one in which it should be used. In other words, we must make our diagnosis from specific findings and not from guesses and assumptions.

Not so very many years ago a physician would not think of examining the urine unless he had strong suspicions that there was something wrong with the kidneys, as either nephritis or diabetes, but now it makes no difference what symptoms are complained of by a patient, the first thing that should be considered by the physician, is the urine, and not only should we take the specific gravity, and examine chemically for albumen and sugar, but there are several other things which should be looked for both chemically and microscopically. As all the solid constituents of the urine vary at different times during the 24 hours, it is never safe to depend on the findings in a single sample, and as there is no great inconvenience connected with the saving of a 24 hour sample, we should always insist on having one. The directions given to a patient for saving a 24 hour sample are these: Throw away the first urine passed on the first morning and save all past that day and night and first next morning, mix all thoroughly and measure total amount and send in 8 ounces with the total amount and name marked on bottle. It is well enough to furnish the bottle as otherwise the one used may have contained some chemical which would alter the analysis and cause much trouble. The physical properties of the urine should be considered first, then the inorganic constituents and lastly the organic constituents.

Under physical properties, we have the quantity, color, transparency, odor, reaction and specific gravity.

The total quantity for 24 hours is on an average between 1200 and 1500 Cc. Women pass as a rule about 200 Cc. less than men but considerable fluctuations are, however, seen, due to the amount of fluids taken in. Less urine is passed in summer than in winter because of the increase in the perspiration, and Hydragogue Cathartics affect it in the same way. It is also decreased in acute febrile diseases, acute nephritis, anemia, atrophy of the liver and cardiac diseases. Shock from anæsthesia or surgical operation may even cause a suppression, especially if there is a mild nephritis. There is a great increase in the amount in diabetes mellitus and insipidus, during reabsorption of large exudates, in the course of chronic diffuse, nephritis and as the results of strong physical disturbances.

The color is normally amber. Pale urines are either very dilute or are seen in diabetes with high specific gravity when pigment sufficient to color the fluid is not formed or in Chronic Diffuse Nephritis with greatly increased excretion. Dark urines are usually concentrated, or are febrile urines with excess of urobilin. Red urines are colored by blood, or by the presence of pyramiden or purgatin in those of alkaline reaction. Very dark urines are noted after absorption of certain poisons as phenol, or the color may be derived from pigmented tumors of the body. Greenish yellow urines are usually caused by the presence of bile, but urobilin sometimes gives this color. Milky urine is seen chiefly in connection with parasitic disease.

Next comes the Transparency: When the urine is passed directly after a heavy meal, a slight cloud is often visible. This clears up on addition of a little acid although the urine was distinctly acid to litmus before. After urine has stood several hours a faint cloud appears even in normal conditions. This is due to the collection of threads or mucous, small granular cells, leucocytes and surface epithelium from the bladder and uretheria and by the deposit of salt as the acid reaction changes to alkaline.

The odor of normal urine is quite characteristic and those which are of interest from a clinical point of view are those of Acetone in Diabetes, Ammonia in Cystitis, Indol and Skatol in recto-vesical fistula and the odor of hydrogen sulphide after the administration of certain drugs.

The reaction of urine from a healthy person on a mixed diet is very slightly acid or neutral. It is alkaline in hyperchlorhydria, during the absorption of large exudates, when the patient is on a vegetable diet or taking large amounts of alkalies or organic acids and may be due to the production of amonia by fermentation by bacteria as in Cystitis. For the general practitioner, the determination of the acidity by litmus paper is all that is necessary.

The specific gravity of urine is a means of roughly estimating the total amount of solid. Hence the determination of specific gravity of a few ounces taken without regard to meals, exercise, amount of fluids recently consumed or the total amount of urine for 24 hours is of no value in making such an estimate. For the specific gravity to be of any scientific value, it must be made from a 24 hour specimen, the whole quantity of which must be known. The normal specific gravity lies between 1012 and 1025, when the amount fo 24 hours is about 1200 Cc. In disease, it may vary from 1002 to 1060. The lower ones are found in cases of Diabetes, Insipidus, Hysteria, Chronic Interstial Nephritis, and the higher ones in cases of Diabetes Mellitus and after the administration of ether or after severe hemorrhages.

Among the inorganic salts found in the urine are chlorides, phosphates and sulphates, which are of interest

*Read at the Medical Society of the County of Allegany, N. Y., May 11, 1911, by G. H. Leader, Cuba, N. Y.

to the general practitioner, and of which he can very readily determine roughly the relative amounts present and which will help him in his diagnosis.

The urine to be tested for chlorides must be free from albumen, which, if present, should be precipitated by boiling and acidifying with nitric acid and filtered out. The urine then is made strongly acid by strong nitric acid to hold the phosphates in solution and a 10 per cent. solution of silver nitrate is added. It is well to do a control on a known normal urine and then if there is enough decrease or increase of the chlorides to be of a pathological importance, it will be readily seen by comparing the two precipitates. The chief pathological conditions in which there is a decrease of chlorides present, are Carcinoma of, or Stricture of the pyloris of the stomach and other forms of starvation, Febrile diseases with large amounts of exudate, as in pneumonia and pleurisy, severe diarrhœas and when the patient has been long on a milk diet. While an increase is due either to an increase in the intake of chlorides in the foods or to the clearing up a pleurisy or pneumonia, so one can readily see that the chlorides are of great importance in conditions of the thorax.

Phosphates are increased in Rachitis, Osteomalacia, Gout, Nervous Dyspepsia and various other nervous affections, and may be tested for in the following way, known as the magnesium test.

The test solution is made by dissolving one part each of magnesium sulphate, amonium chloride and liquor amonia in eight parts of distilled water and to make the test, one part of this solution is added to three parts of urine, whereupon a milky precipitate will be formed, which will be creamy if the phosphates are in excess.

Sulphates are found in the urine as two different kinds, namely, mineral or performed sulphates and conjugate or ethereal sulphates. The former may be tested for by adding an excess of barium chloride solution to the urine, previously rendered strongly acid by acetic acid. This is of little value except they are increased when pus is breaking down or being absorbed. In testing for the ethereal sulphates, we usually deal with the Potassium Iodoxyl Sulphate or Indican. As this substance is characteristic of this class of sulphates, it may be taken as an indicator for the whole group. There are several tests for indican, all based upon the fact that an excess of hydrochloric acid will liberate indoxyl, which can then, by the addition of an oxidizing agent be converted into indigo-blue and finally this can be recognized in small amounts by extraction from the bulk of the urine with chloroform.

The test which I usually use is as follows: Mix an equal amount of urine and hydrochloric acid, add 2 or 3 drops of a strong solution of bleaching powder and mix thoroughly. Now add one or two cc. of chloroform and agitate again. The indigo-blue will be dissolved out and carried down in the chloroform. There are a few precautions to be taken in this test and these are: First, do not add too much of the solution of bleaching powder, as this will prevent a positive reaction by over-oxidation of the indoxyl compound. Second, do not use too much chloroform, as this will dilute the indigo too much and cause a failure to detect traces of indican. Third, a reddish discoloration of the chloroform is not due to indican but occurs in patients taking iodides and sometimes potassium bromide. If the red and the blue occur together, the resultant color in the chloroform will be purple. This source of error may be removed by the addition of a few drops of a 10 per cent. solution of sodium thiosulphite, which will bleach to pink color due to iodine. The clinical significance of this reaction is that it is found in patients suffering from an undesirable decomposition of the contents of the intestinal tract; in other words, those suffering from intestinal toxemia. The occurrence of a positive reaction does not necessarily indicate constipation.

The next things that should be considered in our sample of urine are the organic constituents, which are normally present. These are urea, uric acid, and oxalic acid.

The quantitative test for urea is now a very simple proceedure and is of such importance that it should be made in every urinalysis. Using the Doremus-Hinds ureameter, the results can be much more exact with a good deal less trouble than with the old form of Doremus type. With this instrument some urine is first passed through the small arm to fill the hole in the stop-cock and then the large tube is thoroughly washed with water and filled with Knop's alkaline solution of sodium hypo-bromide, and then the short arm is filled with urine, exactly up to the 0 cc. mark, now, by turning the stop-cock one cc. of urine is allowed to pass slowly into the solution in the larger tube, and when the bubbles of gas cease to rise, the reading is taken, which reading is the fraction of a gram of urea in one cc. of urine, and this multiplied by the number of cc. passed in 24 hours gives the total amount of urea, which should be between 25 and 35 grms. Of course, there will be some fluctuation caused by the amount of nitrogenous food taken and there is also a great difference in the amount excreted at different times during the 24 hours, so a single sample is absolutely of no value. In disease, the urea is increased in fevers where the destruction of proteids is increased, in diabetes and during the reabsorption of exudates or the resolution of pneumonia. A marked decrease is seen in diseases of the liver where there is extensive destruction of the glandular substance, also in starvation, especially that caused by carcinoma of stomach or œsophagus. In the late stages of acute and interstitial nephritis the practitioner had better spend his time looking for casts and albumen in this latter class of cases because they can be found much earlier when treatment can do some good.

The test for uric acid is also very simple and is conducted as follows: Put about 20 cc. of urine into a porcelain capsule, add a drop of nitric acid and evaporate to dryness. After cooling, allow a drop or two of amonia water to come in contact with the residue and if uric acid is in excess, a bright blue or violet ring will appear where the amonia touches.

The oxilates will be taken up under the microscopical examination. Among the substances found in urine pathologically are albumen, sugar, bile, pigment, blood and pus.

In testing for albumen, the first step should always be to filter the urine, as any cloud or the presence of

bladder cells and a great number of bacteria, etc., will give a false reaction.

There are many simple qualitative tests for albumen. The safest of which is the heat and acetic acid test, which is done as follows: Fill a test tube nearly full of urine and boil the upper third. In the presence of albumen or neutral earthy phosphates or of both, a white cloud appears in that portion boiled. Now add a few drops of a 10 per cent. acetic acid. If the cloud is due to phosphate, it will vanish, while if it is albumen, it will remain and in some cases be increased in density. The only precaution in this test is to be sure that the urine is not made too acid, as this will convert the albumen into acid albumen which is not coagulable by heat. The old nitric acid ring test, although recognized by most of the old line insurance companies, has been discarded by the authorities on this subject because of the many sources of error in it, some of which are the rings formed by excess of urates, of phosphates and the presence of nucleo albumen and certain resins.

The quantitative test is also very simple and consists of filling the Esbach's albuminometer up to the mark "U" with urine and then up to the mark "R" with the reagent and mix by merely inverting the tube several times, but not shaking, as this would mix the air with the solution and prevent some of the albumen from settling to the bottom of the tube. It is left standing for 24 hours and the reading is then taken, which is the number of grams of albumen per litre.

These tests are very delicate but one should never pronounce a patient free from nephritis, even after several examinations have shown the absence of albumen, because there are cases, which never show any chemically, but are well developed and show many casts under the scope.

I will not discuss the question of glucose, acetone and diacetic acid, as these were gone into very deeply by Doctor Williams, of Rochester, at our last annual meeting.

The test for bile is as follows: Put some yellow nitric acid (made by the action of wood upon chemically pure nitric acid) in a test tube, and overlay this with the suspected urine. In the presence of bile, there will be a play of colors at the junction of the fluids. Green will be nearest the urine and orange in the upper part of the acid. This test is very delicate, showing bile pigment in a dilution of 1 to 80,000.

Blood may be tested for by mixing a few drops of the urine with a little freshly made tincture of gum guaiac in a test tube and run a little fresh hydrogen peroxide down the side of the tube. If blood is present, a sky-blue ring will appear at the junction of the two fluids, and the test for pus is simply dissolving a small piece of sodium hydrate in a small amount of the urine and if pus is present, it will become thick, tough and gelatinous, while mucous will become flaky and thin, although these can much more readily be looked for when making a microscopical examination.

There is one specific reaction found in urine, which is of interest just now as the typhoid season is opening up, and that is Ehrlich's Diazo Reaction. This is found in the urine of patients suffering from typhoid fever, pneumonia, measles and advanced cases of tuberculosis and some septic infections, and is detected as follows: For this test three solutions are necessary:

SOLUTIONS:

(a) Two grams of sulphanilic acid, 50 cc. hydrochloric acid, dissolved in one litre distilled water.

(b) Five per cent. sodium *nitrite* in water.

(c) Stronger ammonia water.

Mix 50 parts of "a" and one part of "b" and an equal volume of urine, then render the mixture strongly alkaline with the ammonia. If the reaction is positive, the mixture will turn a cherry red, which color will also appear in the foam. If the tube is allowed to stand a greenish precipitate will form.

The microscopical examination is of far more important in kidney conditions than much of that which I have already covered, but because of the lack of time, it will be necessary for me to limit myself to a mere outline of the proceedure and what is to be looked for.

There are two ways to obtain the sediment. First, by the centrifuge and second, by letting it stand for 24 hours in a conical glass. In this case chloroform, formalin, chloral or phenol should be added to stop fermentation. In either case we place a small amount of sediment from the bottom of the tube on a slide by means of a pipette and cover with a cover glass. First, we make note of the crystalline elements present, which will differ in acid and alkaline urines. In acid urines those which may be found are amorphous urates, uric acid, calcium oxylates and some times carbonates and sulphates, while in alkaline urines, we usually find acid ammonium urates, triple phosphates, and rarely cholesterin and cystin.

Tube-casts should always be carefully sought for in the sediment. They are moulds of the uriniferous tubules and vary in character according to the existing abnormal condition of the kidneys. Usually they are composed of albuminoid substances, but there may be in addition epithelium, degenerated cells, blood corpuscles, or fat globules. Their length is about 200 microns or more, their width from 4 to 40 microns. While usually straight, they may be curved or twisted upon themselves.

Blood-casts are composed of coagulated blood and blood cells, and point to the presence of some hemorrhagic condition of the kidney. Often the cast is in reality a hyaline cast embedded with blood corpuscles.

Epithelial casts may also be considered as hyaline casts covered and infiltrated with epithelial cells. They denote desquamation, and are seen in the urine in acute parenchymatous nephritis.

Fatty casts are those in which the coagulated material forming the moulds of the tubules is studded with oil globules. They indicate fatty degeneration of the kidney and occur in chronic parenchymatous nephritis.

Granular casts are made of coagulated material and granular debris. They are usually observed in contracted kidney.

Hyaline casts or mucous casts, are transparent delicate cylinders. They may occur in health, but are always observed in congestion or inflammation of the kidney.

Pus-casts are made up of albuminous material,

degenerated leucocytes, and bacteria, and are indicative of renal suppuration.

Waxy casts are large and yellowish in color, and give the amyloid reaction. They are present in chronic parenchymatous nephritis.

Cylindroids resemble hyaline casts, but are longer, more tapering and constricted. They have no clinical significance.

THE SIGNIFICANCE OF VOMITING IN SOME DISEASES OF CHILDREN.*

BY S. HENRY DESSAU, M.D., NEW ROCHELLE, N. Y.

OWING to the more vertical position in the abdominal cavity of the long axis of the stomach in young children as compared to the anatomical position of the adult stomach, together with the undeveloped condition of the inhibitory mechanism of the nervous system in children under three years of age, vomiting in children is of such common occurrence as a symptom of various diseases that on first thought it may seem to the unobservant physician an act of exaggeration of the medical art to attribute any special significance to it. Because our attention has not been otherwise directed, the vast majority of us have through long established custom, looked upon the vomiting act in children as of purely gastric significance —an indication of errors of digestion only, occurring within the gastric cavity, except perhaps in cases of cerebral disturbance.

These errors of digestion, whether caused by improper food or over-feeding are in the main easily recognized; the history of the case together with inspection of the vomited matter often at once determines the cause. But it is to those cases that become persistent and serious in character, being attended with either exhaustion or wasting or both, and occurring for the most part in the course of disease, that attention is here wished to be directed. Vomiting need not, however, always indicate what we understand as disease disturbance. On the contrary it often may prove a salutary act. There is solid ground for this assertion as is proven by observation on the lower animals, as the cat and dog for instance, where the natural instinct leads them to eat grass or other irritant substances in order to produce vomiting, the secondary effect of which is to empty the gall-bladder through the pressure exerted by the simultaneous contraction of the abdominal walls, and so cause a freer flow of the bile into the intestines. In fact we make use of a like procedure in our treatment of certain disease conditions in adults when we administer emetics. It is a time-honored and efficient practice in the Southern States where malaria is common, to employ emetics to aid the antimalarial effect of quinine in cases of chronic malaria.

This practice, though purely empirical, appears to be based upon a sound therapy when we learn, as explained by Sir Lauder Brunton, that the bile stored in the gall bladder often acts as a nesting-place for the plasmodium, the same, as we now know, is the case with the typhoid bacillus, and until the gall-bladder is emptied by violent pressure and a freer flow of bile produced, quinine does not exert its specific action.

*Read before the North-Western Medical and Surgical Society, New York City, March 15, 1911.

Voluntary vomiting may be produced in certain healthy subjects, one case of this kind in a boy having come under my own observation. In the act of vomiting as described by Brunton, the simultaneous contraction of three sets of muscles is required; viz., the diaphragm, the muscles of the abdominal walls, and the muscular fibres of the stomach itself. The movements of these muscles are co-ordinated by a nervous centre situated in the floor of the fourth ventricle in the medulla oblongata. This centre is closely associated with, though not identical with the respiratory centre. It is an interesting observation to which attention is here directed that the seat of convulsions in children is in such close anatomical relation to the vomiting center: pathologists agreeing that convulsions depend for their causation upon a disease disturbance of the respiratory center of the medulla. It appears highly suggestive of this anatomical situation that the manifestation of either convulsions or vomiting may occur at the onset of fevers in children, especially those of an infectious origin; in the one instance there being a general spasmodic contraction of the skeletal muscles and in the other a spasmodic contraction of a special group of muscles only.

The motor impulses from the vomiting centre in the medulla are sent to the abdominal muscles, diaphragm, stomach and œsophagus by the intercostal, phrenic, and pneumogastric nerves respectively. Certain nerves appear to be more directly connected with the vomiting centre than the others. Such are branches of the glosso-pharyngeal nerve to the soft palate, root of the tongue and pharynx, the sensory nerves of the stomach which are chiefly branches of the pneumo-gastric with connections from the sympathetic solar plexus, the nerves of the liver and gall-bladder, intestinal nerves, renal nerves, vesical, uterine and ovarian nerves, and nerves of the testicles. The sensory nerves of the brain likewise through some reflex connection send motor impulses to the vomiting centre. This brief diagramatic outline of the mechanism of the vomiting act may possibly aid us in a better appreciation of its correct significance.

When persistent vomiting soon after nursing, from one-half to one hour, occurs in an infant under four months of age, more especially if it is breast fed, and a loss of weight soon begins to show itself, it is highly significant of an obstruction to the progress of the stomach contents through the pylorus into the intestines. This obstruction in the vast majority of cases has been found due to a stenosis of the pylorus, depending upon either a spasmodic contraction of the muscular fibres at that part, or to a genuine hypertrophic growth of these same muscular fibres. Suspicion of this condition will be more fully determined if it is found that the vomiting occurs attended or preceded with eructations of gas, that there are scant but normal stools and there is no rise of temperature. Also that there is a visible peristalsis over the epigastrium, and where an organic hypertrophy exists, a tumor of larger or smaller size can be made out by delicate palpation over the right epigastric region. Where the condition has lasted for several weeks or more, dilatation of the stomach can be detected by abdominal percussion. If artificial feeding is being used, the idea is more than apt to suggest itself to the medical attendant that some

change either in the quality or preparation of the food is necessary, which idea, when practically followed, is more than likely to complicate all efforts to recognize the true condition. A catarrhal condition, depending upon abnormal fermentation of the artificial food, is then likely to follow, which in itself would only tend to increase the vomiting. The question of tuberculosis may also present itself as a possible cause of the vomiting in infants under one year of age, but an even run of temperature for several consecutive days, with the presence of epigastric peristalsis or of a tumor, will aid in the elimination of all claims of tuberculosis as a possible factor. Prior to 25 years ago hypertrophic pyloric stenosis was evidently regarded by no less an authority than Henoch as an acute gastric dyspepsia of infants.

There is a most alarming though not necessarily fatal form of vomiting, though fatal cases are recorded, occurring as a rule in children over three years of age, though Rotch has seen it in young infants, who are usually the off-spring of a most highly organized neurotic ancestry. It appears to be self-limited in character. This form of vomiting is apt to occur at longer or shorter stated periods, six weeks to three months, and has received the term cyclical or periodic vomiting. Pediatrists have long differed as to its cause and the question is still *sub judice*. Acetone has been thought by some authorities to be the proximate cause, but there are good grounds for thinking in my judgment, that it is of the nature of a pure neurosis, colsely allied in its pathogenesis to that of hysterical vomiting in the adult. Acetone was supposed to be the basic cause of the vomiting on account of the ethylic odor from the breath, which is a safe guide to diagnosis, but we find this odor also in the hysterical vomiting of female adults. In the chronic intestinal indigestion of children, as pointed out by the writer in a paper on that subject, read before this society in April, 1898, there also occur at intervals severe attacks of vomiting of quantities of thick, glairy mucus, accompanied with a distinct rise of temperature and abdominal pain. This is remarkably similar in character to cyclical vomiting. One of the histological features of childhood is, that the mucous secretions contain a larger percentage of mucin than do those of the adult. This is for the better nourishment of the young mucous cells. Mucin is the very best culture medium known for a certain class of bacteria within the stomach, most probably that variety that decomposes the fats, the fatty acids liberated, inducing in the carbo-hydrates the formation of butyric and ethylic acid, and through the by-products formed, in the presence of hydrochloric acid, the formation of *acetone*. These bacteria seem to be similar in their action to the foreign rancid-forming bacteria, and are not to be confused with the normal fat-splitting enzyme-lipase. It is moreover probable that the splitting activity of these bacteria may be allowed fuller play through changes in the quality of the gastric juice, influenced in some unknown manner through the action of trophic nerves, on account of the unstable condition of the general nervous system. Interference with normal digestion is thus produced. Chronic intestinal indigestion of children is more likely to manifest itself in subjects who are the descendants of gouty or neurotic parents. The feature of periodicity in cyclical vomiting in children points strongly towards a nervous element, and when regarded in connection with the formation of acetone, also found in the hysterical vomiting of adults, forms a striking coincidence of causation that would appear to place it within the influence of a disturbed nervous condition. Pepper found antipyrin to be a most effective remedy for the attacks — this would seem to be cumulative evidence of its neurotic nature, as *curationes morbus ostendunt*. The excessive formation of abnormal acids within the stomach easily explains the irritant action leading to vomiting.

In certain cases of summer diarrhœa in infants, vomiting may in the course of the attack become the most prominent feature of it. At the onset of the attack the gastric irritation causing the vomiting is undoubtedly due to the toxic products of a luxuriant germ growth taking place within the stomach cavity. Later on, however, this condition of germ growth is more manifest in the intestinal canal, and it seems more than probable that the vomiting can then be attributed to reflex intestinal irritation, the same as we have in a case of strangulated hernia or appendicitis. Hence it is highly significant of very profound and serious lesions of the mucous lining of the intestines. Although the diarrhœa continues, it appears of secondary importance compared with the vomiting, as a danger signal of impending collapse. The family are naturally highly alarmed, as their entire attention is fixed upon this feature of the attack. However, we should not be misled in our efforts to control the intestinal trouble. Even though the case may not be first seen by the physician until this situation exists, he should not allow his attention to be diverted from the main cause of the vomiting, which lays in the toxic fermentation with its resultant lesions in the intestinal canal.

When more or less persistent vomiting occurs in the course of or during the convalescence of a case of Diphtheria, we may be quite safe in regarding it as indicative of involvement of the Kidneys, and an omen of danger. The pathological researches of Cornil and Ranvier, published in the *London Practitioner* about 1884, no longer leave any possible room for doubt that the lesions of the various tissues of the kidneys from the diphtheria poison, are very similar to those arising from scarlatina and are equally as serious in character. Vomiting in diphtheria may also indicate an endocarditis.

From the earliest times we have been so accustomed to dealing with the renal complications of scarlatina only, that as a matter of mental habit, we have neglected to look for nephritis in other infectious diseases of children, such as diphtheria and measles for instance. One reason for this may be that it is not so common as in scarlatina, and therefore requires a little extra thought. It is quite as important and necessary, however, to watch the urine during the course of an attack of diphtheria and measles as it is in a case of scarlatina. While vomiting may be the first signal of a nephritis in diphtheria, convulsions are highly suspicious of the same trouble in the later stage of measles, and have been, with good reason, always held to be of bad prognostic significance. Attention here might be called to the fact that vomiting, not of a serious character, however, usually attends the onset of an attack of scarlatina. Here the vomiting

has been thought to be due to an extension of the eruption to the gastric mucous membrane, creating the condition known as erythematous gastritis; the eruption producing an irritant effect upon the sensory nerves of the stomach, similar to the condition we have in the irritation of the bronchial mucous membrane from the eruption in measles. At the onset of an attack of croupous pneumonia in children, the vomiting may be justly attributed to the action of the toxins of the pneumococcus, circulating in the blood, upon the vomiting centre in the medulla. Whether or no the vomiting in the later stages of diphtheria is due to a true uremia, as has long been regarded the explanation of vomiting in Bright's disease, or to a reflex impulse of irritation of the renal nerves from organic changes in the kidneys, upon the vomiting centre in the medulla, it would be most difficult to determine. Nevertheless, under any and all circumstances, a complete urinary analysis is most imperatively demanded. In fact, what has here been offered in a superficial and desultory way in regard to vomiting occurring during an attack of diphtheria, should tend to place a serious responsibility upon the attending physician, who would not be faithfully and conscientiously performing his whole duty to his little patient if he did not keep himself fully informed of the renal conditions in all serious diseases of children.

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PULMONARY PROPHYLAXIS.

BY JOHN B. HUBER, A.M., M.D.

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HAVING been invited to address a lay audience on this subject, I prepared some notes, of which the folowing paragraphs are an elaboration. I hope my readers may find here an excuse for the elementary nature of this paper, besides something of interest to the practicing physician.

The lungs are very delicate structures, and they are likely easily to be disordered. Then pulmonary diseases result, of which the most frequent in these times is consumption, or phthisis or pulmonary tuberculosis. Phthisis is responsible for more than one-seventh of all deaths and for more than one-fourth of all deaths in adults. At different stages in the world's history some one disease has been the universal scourge. Thus epidemics of cholera have from time to time swept away large portions of the world's population. Before the beneficent discovery of Jenner small-pox had destroyed vast numbers of lives. The disease of these times which claims the highest death rate is phthisis. Its ravages do not present so terrible an aspect, nor are they so gruesomely picturesque, but it is doubtful if this insidious disease does not stand pre-eminent in the number of its victims.

Probably everybody has seen cases of phthisis. It is observed that they have lost a great deal of flesh and are very weak. They sweat a good deal, they have fever, and they are apt to have a pink flush on their cheeks which is at once seen to be a sign of sickness and quite unlike the blush on a healthy person's cheek. The rest of their faces is pale and suffused with a clammy sweat. Their cheek bones are prominent. Their eyes have a quite unnatural and sickly brilliancy. These eyes appear large and luminous and beautiful; however they do not bespeak health—they represent rather disease and death. Such eyes as the poet Bryant pictured in a touching and melancholy sonnet. The consumptive is short of breath, and he has a cough—a cruel, incessant, hacking cough which wracks the chest and never lets him rest.

This dreadful disease presents frequent illustration of the pathos of existence and the cold indifference of fate. The poor suffer most and the consumptive is often nursed by an affectionate relative until in time the nurse takes the contagion from his charge and becomes himself an additional victim. For consumption or tuberculosis is a communicable disease. Its specific germ is contained in the sputum of the patient, which, if it is not disposed of properly, dries and is taken up by the air which other people breathe. The infective agency of tuberculosis may moreover be introduced into the body by drinking and eating milk and the meat of tuberculosis animals, or through abrasions (especially of the lips) or wounds and cuts.

It is the bacillus tuberculosis which is the essential factor in the production of this disease.

This bacillus, the most potent existing enemy to health, is in length from 1/8,000 to 1/12,000 inch. Its breadth is about one-fifth of its length, or from one-quarter to one-half the diameter of a red corpuscle. It is found only in tuberculosis.

We are few of us immune to the action of this bacillus, and the reason we don't all contract the disease is that there are predisposing causes which are necessary to fit the body for the reception of the bacillus—causes which make the economy vulnerable to its attacks. We are all constantly breathing in the bacillus with the air. But those of us who are in health are unaffected, just as the healthy are able to resist many other disease-producing agencies.

A predisposition is any agency which tends to devitalize, to enervate the organs and tissues of the body, thus rendering them a congenial soil for germ implantation and germ multiplication. Such predispositions are insufficient food, alcoholism, poverty, lack of sunshine and of pure air, overwork, mental depression, previous weakening diseases (such as typhoid, pleurisy, pneumonia), poor housing conditions and hundreds of other factors which tend to deplete the system and make it vulnerable to germinal attack.

How now, should we guard against this disease; how shall one so inure his body that it shall not become predisposed, that it shall not become a congenial soil for the tubercle bacillus?

To begin with, one must live the physiological life. Those who would do this should rise betimes, bathe well, eat slowly three meals of wholesome food daily; should be in the sun and the open air a great deal; should avoid dusty, damp or foul air; should go to bed early and sleep at least eight hours. They should wear all wool underclothing the year round, thick in the Winter and thin in the Summer. The night wear should be of wool changed from that of the day, of course; woolen socks should be worn in bed if the feet are cold. Warm footwear and stout, watertight shoes,

preferably with cork soles, should be worn. They had better let tobacco alone; and they should take alcohol very moderately and never without a bite of food at the time of drinking. There should be fresh air, and lots of it. Some people seem to have an antipathy for fresh air not unlike that of the tramp for soap and water. Fresh air has never hurt anybody. It abounds over all the surface of God's earth except in the houses which man has built. The peoples which pass their time out of doors know nothing of coughs and colds. Not fresh air but the want of it is the cause of many diseases. Fresh air is nature's disinfectant; there is hardly a better. Fresh air provides oxygen which makes blood pure; and pure blood gives health and strength.

Sick people especially need fresh air; they are often sick because they have not had it. Nowadays the phthisical are kept out of doors during the greater part of daylight. While the well are "hugging fires," they walk or ride, if possible; or they recline—wrapped up and sheltered, of course—in the open air, through all changes of temperature, fearing no cold, no matter how severe. If the patient is so ill that he cannot be out of doors, his bed is drawn close to the wide open windows; when indoors; day or night, his windows are freely opened. And such treatment never in the slightest degree results unfavorably.

Air that is breathed over and over again unchanged soon becomes poisonous; and cold air, by the way, is not necessarily pure, simply because it is cold—it needs changing just as warm air does.

To have rooms constantly supplied with fresh air, there should be an arrangement by which air from out of doors is supplied all the time. A current from room to room will not meet the requirements,—the air should come from out of doors. The room need not be cold—of course a good fire on a cold day is very necessary to health—but a room can be ventilated and warmed at the same time.

An open grate, or a register, or a stove may cause a sufficient current. Or one may raise the lower sash of one window and lower the upper sash of a window adjacent. There should be such a current in the sleeping room all night long, and there will almost never be a night so cold that this cannot be done. On very cold nights it would be sufficient to raise and lower the window sashes one-half inch. Or one might raise the lower sash six inches and fit a board beneath it; thus air will pass through the space between the sashes. Of course drafts are to be avoided. The temperature of the sleeping room should be between 50 and 55 degrees F. and that of the sitting room between 65 and 70 F. Then there should be sunlight. Sunlight kills the tubercle bacillus. It is known that many substances absorb and then emit rays of light; and it is not improbable that under the influence of sunlight, chemical changes occur in our bodies which make for health. But however we many theorize concerning its mode of working, we know that sunlight is a benignant agency. One D'Annuncio, a decadent, wrote a book in which almost the only normal thought was contained in the sentence: "Let us go out into the sunshine."

Then there is bathing. The skin has important functions; it respires, it secretes and it excretes. Therefore we should bathe well, in order to keep the skin in as normal condition as possible. A cold sponge bath to the waist on rising is, in addition to the advantages mentioned, a good tonic for weak lungs. If this is done the bath room should be warm, and vigorous friction with a rough towel should follow. A cold bath in a chilly room would very likely occasion in a weak constitution shock followed by depression. In such cases tepid water should be substituted for cold.

It is said our English brethren take cold tub baths (at the temperature of running water) on rising, even on the coldest mornings. This practice is probably not so general as we are lead to believe; no doubt it is indulged in only by eccentrics of whom there are not a few on the tight little island. A Birmingham (England) physician advocates instead a tub bath on rising at the temperature of the body (98 degrees F.) in a bath room at a temperature of about 70 degrees. This advice is surely rational and wholesome. The feeble might stand, while taking a sponge bath to the waist, in a bath tub in which there is very warm water up to the ankles.

There is exercise, walking, running, boxing, golf, and bicycling in moderation, are all good exercises. Professor Blaikie, after the many years since his work on "How to get strong" was first published still gives walking precedence over all other exercises; certainly it is as good as any, and is the most inexpensive. Golf is excellent for the weak-lunged. It keeps such in the open air all the time, and there is no danger of overtaxing the lungs.

Usually men who work out of doors get all the exercise they need. But people who work in factories should get some fresh air, in the evenings if they can't get it at any other time. Night air is not bad, as some people think,—although it is not as good as the air when the sun shines. "There is no other air for us to breathe at night but night air." The housewife should make it a rule to go out of doors, walking or riding, at least one hour every day.

The thing to remember about exercise is to stop when fatigued no matter how much or how little has been taken. The phthisical are especially prone to over-exertion. We ought to breathe through the nose. Subsidiary cavities are provided within the nose in which the air is filtered, warmed and moistened in its passage to the lungs; otherwise, as in the pernicious habit of mouth-breathing, the air gets into the lungs cold, raw, and often dust-laden. Moreover, there are physiologists, who consider they have found the nose to possess a distinct respiratory function.

By the use of tobacco mucous membrane of the air passages is rendered dry, the voice becomes husky, because of the irritation produced by the inhaled smoke, and a teasing cough results. This is certainly not good for weak lungs. Those who fear tuberculosis, had best let alcohol severely alone.

Any catarrh or other affection of the nose or throat should be cured. Such diseases contract the air-passages, enough air is not inhaled, there is air-hunger and weak lungs and a narrow chest are the result. Singing is good for the lungs, though of course, not essential. If one does sing, and is able at the same time to maintain cordial relations with his neighbors, his lungs will be all the better for it.

The weak-lunged should get into the habit of taking long breaths and of expanding the lungs freely; good

results would follow the practice of the following gymnastics for five minutes three times a day, on rising, before eating at noon, and at bed-time.

It is very simple and no machine is required. First, any clothing that would interfere with the free expansion of the chest should be removed. We breathe about eighteen times a minute, men a little more slowly than women. The exercise consists simply in breathing more slowly than usual for five minutes. Let a man breathe ten times a minute or fifty times in five minutes, timing himself by the clock. And let a woman breathe twelve times a minute or sixty times in five minutes, timing herself by the clock. Deep breaths must be taken. To do this, one must stand erect, soldier-wise, the shoulders thrown backward, the chest thrown out and the arms by the side.

Of course, enough clothing must be worn to keep the body warm, but there must not be so much that it will construct the chest and interfere with free respiratory movements. "Put your chest protector on your feet." This is an absurd way of putting it; but if the feet are kept warm and dry many a disease of the respiratory tract will be avoided.

THE PROBLEM OF LIVING LONG.

BY W. T. MARRS, M.D., PEORIA, ILL.

IT is the hope and desire of the average individual to live to an advanced age, provided that he can escape senility with its palsied hands, doddering gait, dribbling urine and other marks of unloveliness that are so often concomitants of those who are traveling the Pacific slope of time. Some one has said that people no longer grow old, but now retain a certain measure of vigor and usefulness until they are gathered hence. It is true that we have now better advantages for withstanding the ravages of time and the inevitable crimps which the passing years are disposed to write down in our mortal bodies. The toothless old man is now a rara avis in these days of competent dentistry which may be purchased at a price within the reach of nearly all. There is now no excuse for an individual bolting his food with its sure and swift damaging consequences in the way of perverted nutrition, autotoxemia, Bright's disease, etc. The cosmetic effect of good dentistry is not an inconsequential matter. The feeling of self-respect and sightliness in the eyes of others that must naturally result from the knowledge of a decent appearing mouth is worth while and helps to make one have a desire to live long and usefully.

Ophthalmology has helped the old and prematurely old people in a remarkable manner. The detection of refractive errors has reached a precision that could not have been thought possible a few decades ago. Glasses are now seldom purchased from the druggist's showcase in hit-or-miss style without even removing a lens from its frame. If one lens fit its fellow had to also in a tolerable degree or the pair of specs was passed up as no good. We do not insult and torture our eyes as we once did, but now, after the manner of the expert painter, we "mix brains with it." In promoting longevity and keeping young nothing excels that of keeping ourselves in touch with the world and with things that are alive. One must have eyes in order to do this and the oculist has in this matter rendered invaluable aid to those whose vision has been inclined to early decay. The old man and the old woman now read the daily print, the magazines and current literature and have their fingers on the pulse of the world. Yes, they read novels and go to the theatre, pastimes not indulged in and somewhat unknown to elderly people a century or half century ago. Good eyes enable them to see and enjoy much long after they have reached the biblical allotment of three-score-and-ten.

Other physical and material aids have come to bless and benefit people as they begin to get old, or even before the beginning. Among these are a more judicious adjustment of bodily needs in the way of food, drink, clothing, bathing and hygiene in general. Not of any little importance in preserving ourselves and standing off old age is psychology and a favorable introspection. We are not now so amenable to adverse suggestion as we once were when a man was considered old at fifty and was living on borrowed time if he reached seventy. People used to think it almost sacrilegious to go beyond the proverbial seventy, but we know now that a hundred years is something near the natural lenght of normal lives, or about five times the length of time required for the body to develope and arrive at maturity. Our mental attitude toward life therefore has much to do toward keeping us young, for we all unconsciously pattern our lives after any ideal which we have set up and constantly keep before us. The shaggy and unkempt man of advancing years a few decades ago shows quite a marked contrast from the same person today with his neat appearance of head and face, with clean linen, whose step is elastic and his eye alert with an interest in things of the living present.

The benign effects upon womankind of giving up the idea of growing old are even more pronounced than in men. Old ladies do not wear black clothing as they once did and the passing up of this mortuary shade has had a very salutary effect upon the lives of many women. Who, constantly togged in black, could help feeling morbid, apathetic and ready to shuffle off? The woman of any age who chirks up, dresses becomingly and keeps her "crowfeet" ironed out has done much that will exert a rejuvenating effect upon her vital centers. If our subconscious forces get the right direction from our ideational centers we become what we have set out to be. We grow to be like our ideals. If we want to remain young we must think young thoughts and withstand and repel those suggestive of old age. One of our cults has done great good in causing women to forget their diseases and the aches and pains to which their mortal body is subject. Mr. Bumble, one of Dickens' characters, in speaking about justice said, "the law is a ass" and we might paraphrase this by saying "Christian science is a ass;" nevertheless this socalled science has been instrumental in doing much good in lieu of any better agency. It has in spite of its queer tenets and bold and uncompromising stands on many matters, helped many persons to forget themselves and their ailments and

to perish the everlasting ego. In so far as its teachings try to inculcate the idea of mental and physical tranquility for the alleviation of ills—which are nearly all functional—it is capable of accomplishing much that can come only through mental and nerve poise.

The matter of prolonging life should therefore enlist the interest of altruistic medicine and science more than in simply curing the body after it has been attacked by disease. Longevity is increasing but it is not now what it perhaps will be in a few years hence. The average length of life now is about forty whereas some years ago it was about thirty. According to scripture antedeluvian life was nearly one thousand years. Methuselah was 969 and his grandfather Jared lived nearly as long. Noah was 600 when his flood was pulled off and after it was over he survived 350 years longer. The postdeluvians were not so blessed in long life. Abraham was 175 at his death; Sarah bore him a son when she was about 90. Evidently women once remained fruitful longer than now. Moses died at 120 and his sister Miriam at 130. King David was 70 at his death and his son Solomon 58. Mohammed lived to be 62 and Confucius 70.

The period of shortest average human life was about 400 years ago when it was something like 18 or 20. It is now increasing in leaps and bounds, although its most conspicuous augmentation is because of the lessening of infant mortality. Centenarians are occasionally found, but they are not painfully numerous. How many, for instance, do you happen to know? Every person who has completed the century run gets a great deal of newspaper publicity and in consequence of much advertising centenarians, like other advertised goods, are not so much or many as they appear to be. Many have within the past few decades, however, reached 80 or 90. Among the octogenarians of note that recur to me just now are Gladstone, Oliver Wendell Holmes, Bismark, Li Hung Chang.

The study of longevity embraces a research that is far-reaching in scope with much that is both practical and academic. Heredity is a factor always to be reckoned with in determining the probable length of a human life. It would seem that each human life during its intrauterine formation is vitalized with about so much energy and is wound up to run approximately about a given length of time, barring violence and too grave a violation of that expansive condition known as environment. The study of the cell when divested of some of its histological tedium is interesting. A human life is evolved from a tiny cell called the ovum which is fructified by another cell known as spermatozoon. These cells are about 75 per. cent. water and the rest of their components are proteids made up of phosphorous, carbon, hydrogen, oxygen, sulphur and nitrogen. Every cell represents the rather complex phenomenon which we call life. Embryonic cells are much alike physiologically and anatomically, yet they possess characteristics peculiarly their own. Without this distinctive difference in cells all people would be much alike physically and temperamentally and would occupy the same monotonous plane of life. The similarity of cells is the reason for child resembling parent in features as well as in disposition and idiosyncrasies. There is in the cells an impress which stamps our individuality and it might almost be termed "a divinity that shapes our end." In a considerable degree we are what we are in spite of ourselves and in defiance of all our volition. We can not help it if we happen to be either tall or short. Our cells determined this matter as it determines many things concerning our life and destiny.

These things being true it is only natural to assume that each person at his birth possesses a cellular development which largely determines longevity. If our cells possess a good measure of integrity they are not doomed to early disintegration and decay. Naievely we say in this event that we have inherited good vitality or a sound constitution. Since then life depends upon the activity of the cell many theories have been built up to account for senility and physical deterioration. These are of little practical interest. One of them is the phagocytic theory. The phagocytes or scavengers devour noxious or diseased cellular tissue in order to rid the body of contamination. When cellular structures are weakened by bacteria or their toxines or from other causes the phagocytes carry their work of consuming abnormal cells to such an extent as to impair and devitalize the body until death ensues. Chemical changes are sometimes produced in the body in such a way as to cause cell death known as necrobiosis; this is often observed in fatty degenerations and other pathological states. Necrobiosis or cell degeneration is also thought to be favored by colonic fermentation by which toxines are manufactured so abundantly as to inhibit cellular regeneration.

The most popular theory of old age is the one concerning the vascular system. We hear dinned in our ears so often that "man is as old as his arteries" that we can not forget it. Arterial sclerosis is a topic which has sufficient scope within itself for voluminous writing of a scientific or quasi-scientific character. Yards and yards might be written upon it. There is no question that the smoothness of the inner arterial coat and the integrity and elasticity of its other structures determine to a great extent one's chances on the long life game. At the same time the arteries do not constitute by any means a solution to the problem of longevity. Many of the animals in the lower forms of creation have no arteries to become hard, although this could hardly be called fair analogous reasoning. Another theory of senescence or decay sanctioned by Professor Metchnikoff and other able scientists is to the effect that artrophic changes take place in the tissues of the body, especially in the brain and ganglionic centers. The phagocyptic theory might be hooked to this with a certain degree of consistency. It is well known that anatomical and physiological disintegration is a concomitant of senility. It is said the brain loses an ounce in weight each year after the age of sixty.

Viewed from a practical standpoint there is no subject that is of more importance than that of living long and healthfully. Since life insurance has gained the stronghold that it occupies today

we have come to learn more and more concerning life and death. The life insurance business is based upon vital records and through the facts promulgated by these companies we are enabled to get down to brass tacks concerning longevity. Incidentally it has spurred us on to a keener interest in preventive medicine. It pays insurance companies to keep their policy-holders alive as long as possible and to this end they have instituted a plan of re-examination of their patrons at stated intervals with suggestions of the best means they may employ for the prolongation of life. It has been discovered that persons afflicted with many diseases once thought to mean inevitable death in a short time—e.g., nephritis, diabetes, tuberculosis—could have their lives prolonged in a remarkable manner by conforming to the scientific rules and regulations laid down for them. The largest and strongest fraternal insurance company in this country has founded a tuberculosis colony in the hope of prolonging the lives of its tubercular members. From no other source is preventive medicine having such substantial encouragement and backed by such positive knowledge of human life and disease as from the life insurance companies. They pay out millions of dollars annually for death losses which result from preventable diseases. It is bad business policy to let these people die, or another case of the sacrifice of the goose that lays the golden egg. And while most strong organizations are by common consent sordid and devoid of heart, yet conservative folk admit that some of the greatest movements for blessing and benefitting the race have emanated from organizations which did not masquerade under the cloak of charity. The life insurance business has therefore given us an applied and practical insight into disease which we did not before so thoroughly possess. It has quickened our interest in preventive medicine and caused us to study the etiological factors of diseases before the disease is plainly in evidence. The problem of longevity hinges largely on the elimination of preventable diseases and the recognition of curable diseases sufficiently early that a cure may be effected.

Preventive medicine becomes more nearly an exact science each year and is destined to play a more important role in the lives of our clientele in the future than the attempt at curing diseases after they have become entrenched. After all the prevention of disease or the matter of keeping people well resolves itself into an economic matter and one which should enlist the support of the whole public. Diagnosis has reached a state of precision which enables us to scent diseases afar off and thus be able to inhibit their development. For example, a searching examination of the urine will show us a trend of affairs that may lead on to serious disease, but which now in its incipiency may be intercepted and broken up by appropriate attention to hygiene and manner of living. We can now recognize the invasion of tuberculosis before gross lesions are manifest or clinical signs have asserted themselves with vehemence, and our chances of a cure are in such cases therefore many fold greater. I believe that thousands of cases of acute tubercular infection could be cured every year if we would only get control of them sufficiently early in order that we might make them take absolute rest, forced nutrition and such other measures as seemed most indicated.

It is more the purpose of this article to deal with the problems of those who have reached middle life and desire their lives well projected into the oncoming years. How are we to live in order to attain happy and healthy old age? Philosophers have essayed to make the way clear and martyrs to science and cranks and many kinds of men have endeavored to put pet theories on a living, tangible basis. The ambition to be a centenarian has been carefully nursed and coddled by many. Some one has said: "To be a centenarian you need not be painfully virtuous or brilliantly intelligent, nor can you be a fool." Another has called attention to the fact that the best scholars in our colleges survive the rest, virtue like intellect tending to longevity. Some of the physical requisites of long life are a large brain, deep chest, sound lungs, a serviceable heart and good digestive system. Comparatively speaking, the body will in such a case be long and the limbs short; the person will appear tall when sitting and short when standing. The palm of the hand will be rather long and heavy and the fingers short. When the nostrils are large and open good lung capacity is indicated. Small or pinched nostrils indicate a weak chest. These are ancient and generally accepted signs of longevity, but there are of course plenty of individual exceptions. Bacon, the philosopher, attached much importance to outward signs as an index to long life. Among the conditions which augured for ripe old age were these: Slow growth, coarse hair, rough skin, with deep wrinkles in the forehead, firm flesh, a large mouth, wide nostrils, strong teeth set closely together, and a hard gristly ear.

There are also moral and psychic factors which are important to longevity. Some one has pointed out the indications for long life in this manner: "Slowness of mental and moral maturity, a not too critical or susceptible virtue, the stoical hardening character of heart, a tendency of taking pleasure in rendering more or less cruel judgments, and the willingness to accept philosophically things that happen and just as they come. These are mental and moral traits, or brain-cell qualities, of peculiarity in temperament; and when persistent through life, together with inherent power of the individual's blood and tissues to protect the body from onslaughts of germs, they tend to render the possessor immune to an early decay in spite of himself." The true secret of longevity would seem to be found in the inherited cells of brain and tissues with due allowance for the demands and restraints that are put upon them. If one is foreordained (not in a biblical sense) to live a long life he can do so with a good deal of insults to his mortal body and without being sweetly and constantly attuned to his environment. His method of living may be worth while but it may not be the primary factor conducing to his longevity.

Longevity as applied to races and nations, primitive as well as modern, would indicate a substantiation of the principle of survival of the fittest. By "fittest" is not meant virtue, goodness and the noble qualities of mind and heart but rather the ability to transmit to succeeding generations those charac-

teristics which will enable them to live. Before we became civilized the weaker were prone to die off because their inherent vitality was low and nature has ever in this conservative manner kept down an over-production and excessive peopling of this earth. Early man worked out his own destiny to a great extent by killing his weaker brother outright, thus assisting nature. The races that have had the hardest struggle for existance have furnished us the most centenarians. The weaker ones succumbed and only those of endurance were permitted to live and transmit their kind. The Irish and Jewish races have for hundreds of years had a tough struggle with their oppressors, yet according to statistics they have given us the most centenarians. Japan also furnishes us with many hundred-year-olds. The Japanese as a people have not in history been conspicuous because of their virtue or their intellect or even their hygienic manner of living. Green old age would therefore seem to be largely a matter that is peculiar to certain races and certain families. Mental and physical activity during the first half of an individual's life is a matter conducing strongly to advanced age; the same is true of the cessation of activities during the latter half of life.

In order to round out a goodly number of useful and happy years one can only make the best use of the raw material at his command. He can not undo what his ancestry has done for him in handing him a vital resistance that is below par. He can, however, do something—much in fact—in correcting an adverse heredity by living in such a manner as to conserve such vitality and endurance as he has been endowed with. In this matter each individual is a law unto himself; one person's rules may be a total misfit for his neighbor. Temperance and moderation in all things are best calculated to promote health and long life in most people, although it is not a difficult matter to find living refutations of this principle on all sides. Excessive eating, the use of tobacco and indulgence in alcoholics are known to be unwise, but quite often a centenarian bobs up and tells us that he has used these things freely and to his heart's content all his life. Too often the careful and abstemious person succumbs to disease. In many cases it would seem that the inuring and hardening which certain individuals bring upon themselves help to insure health and longevity; but perhaps the same practices indulged in by others differently built would mean early decay and death. Each person must seek his own status, those habits and environment which bring him the least physical friction and mental unrest, and having found such he must live within its confines. It is abject folly to attempt to follow ready-made rules. There is a sort of intuitive hunch which is of invaluable aid to us in chosing or tabooing a certain method of living. Roughly speaking we soon come to a realization of what is good for us and what is good to let alone. This is not wholly unlike the instinct that prompts the alligator to swallow a generous bunch of pine knots when he goes into winter quarters; he feels that he needs something to keep his stomach from digesting itself during his long days of hibernation.

If one desires to live out the biblical allotment or go a little past that deadline he must exercise some scrutiny and judgment over his regimen after he has reached the age of fifty. It would be better if he begins much sooner. But after fifty one must slow down on his eating if he knows what is best for him. Assimilation and elimination are now not up to their wonted standard and too generous an intake of food will cause the body to be loaded with toxines ad toxic matter. The wear-and-tear is not at this period so great as formerly and a lesser quantity of nutritive material is required. Too often the person of advancing years is disposed to feed more sumptuosly than in earlier life, often to the point of gluttony. He prides himself upon his good digestion and his physical rotundity prompts him to believe that the nutritive process is in a high degree of perfection. In this the individual is so often wrong and he does not realize that he is simply storing up trouble for a future that may not be far distant. As a matter of fact a sound stomach is about the last organ in the body to go on a strike, but performs its function in a fairly good manner when many other organs and tissues are nearly disintegrated by disease. Too good a stomach may, in fact, indirectly be the cause of other organs being taxed to death. Grave liver, kidney and pancreatic disease is seldom allotted to the one who eats to live. The same is, generally speaking, true of gout, rheumatism, cystitis and many other affections.

The average person who is beginning to grow old does not drink water in sufficient quantity. Children can always drink; their tissues are composed mainly of water. The oldish person has not the same penchant for pure water in copious quantities that he once had. And yet he needs it abundantly just the same. His system is more sluggish, his blood stream lacks the volume and strength of former days and his whole system is becoming hardened. The animal matter is diminishing and the mineral matter shows signs of increasing; old age being a sort of drying and ossifying process. The pretty maid of twenty has a lovelier face than her grandmother of sixty because it contains more animal matter, more water. All these things being true, it is only natural that in the old person the elimination of detritus, toxines and all other kinds of foreign matter goes on more slowly. More water helps to sweep out deleterious products and incidentally helps to round out the tissues and lessen the desire for unnecessary food. The person who is traveling westward should therefore drink water freely and the purer it is the better results will be obtained. If prostatic or cystic trouble is in evidence I believe that distilled water is to be preferred to plain water.

Every person should so keep a tab on himself and his vitality that he will know it before there is a positive and unerring break in his health. There is an involution or "change" that comes to man the same as it does to the woman and just as inevitably. There is no fixed age at which this may be inaugurated; it usually comes to men later than the "change of life" comes to women. Somewhere around 45 to 50—sometimes earlier often later—the average healthy man begins to feel that he is losing in resiliency and endurance. To compare him with a rubber ball, he has not the elasticity and rebound that he once enjoyed. It is true that he enjoys a

certain measure of health and strength, but his old-time vigor is not there. His ambitions are of the milder sort now and his habits more quiet and sedate, although his pleasures may be slightly more sensuous. Before he realizes it he is becoming fixed and set in his manner of living. He now likes his own bed, his own method of cooking and his own cosy corner or particular chair. He is not old—yet. But these are finger-points on life's highway and he who is wise will heed them. In fact the first signs of old Father Time's crimps are mental rather than physical; we simply feel that we are not now "like we used to be." So when we get these early psychic hints that we are destined some day—a long time hence if we shape our lives in accordance with its dictates—to grow old we should begin to modify our course of living. That does not mean that we should begin to "put our house in order" in anticipation of dissolution. We should at this time of life begin to think of enjoying life, if unfortunately we have neglected to do so up to this time. We should turn off some of the steam and slow the engine down; we should let ambition take a little slump even though we have not yet gained the coveted competency. If necessary in order to live and make ends meet one should change his occupation to one requiring fewer hours and less assiduity. The open air and the broad fields beckon, and as much land as there is in this country there are no reasons why many more people, especially those of advancing years, should not take to agriculture and allied pursuits in a diminutive way. It is almost pathetic to see the struggles of the elderly man in the city if fortune has frowned upon him. He is compelled to blacken his silver locks, wear a kiddish hat and resort to other wiles and expedients in order to look young. His job depends upon it; the old man is not wanted. Frugality and judicious preparation of temporal affairs for old age can hardly be considered within the scope of a medical article, but it is nevertheless true that poverty and the hardships of living are fruitful causes of premature old age and consequent early death. Independent pursuits and avocations go far toward obviating many of the conditions that are the foes of people who are on the wrong side of fifty.

While mental and physical repose in a comparative degree are necessary for people who are getting on in years, but too great a passivity is wrong. Ben Franklin or some other wise one said: "It is better to wear out than to rust out." This is as true with old men and women as it is with an old self-binder. When the mind and body cease all activity cell rejuvenation and repair go on slowly; a mere vegetative existence is not to be desired. A person should never be so old as to preclude his taking an interest in things. When the mind ceases cerebration cell death begins. The old who do not feel the need of a great deal of useful work should have a varied line of amusements and exercises. Laziness and mental and physical inactivity are almost as bad as living a too strenuous life. Moderation should be the keynote of life and every excess calculated to detract from one's store of vitality should be painstakingly suppressed. Bathing and massage are more essential in later life, for the dermal function is now much more sluggish and does not of its own accord throw out the poisons it should. Good elimination through the skin saves much work on the part of the urinary function.

What shall we forbid the old folks in the way of food, drink and physical enjoyment? Caution with regard to diet has been mentioned in a general way. The amount of food ingested should be smaller, but a rather complex dietary is to be recommended. We are in a goodly measure a reflex of what we put into our stomachs. The integrety of our tissues and the versatility of our characters depend considerably upon the way we are nourished. Old people need a lighter diet, consisting largely of fruits, vegetables and cereals. To say that mastication and insalivation should be good would be another case of "carrying coals to Newcastle." In extreme old age the diet should approach that of the young child, for it is then that the digestive function in capacity is somewhat like that of the very young. Buttermilk is a diet that has had a good deal of exploitation as a cure for old age or for standing off its ravages. The lactic acid element is supposed to oppose chalky deposits, keep the arteries limber and in fine counteract the aging process. Many old people say that between drinking sour milk a lifetime and being dead they prefer the latter as a lesser evil. Buttermilk contains most of the elements that go to maintain bodily nutrition and is an invaluable adjunct to the bill-of-fare. But after so long a time it palls on most people and when a food or drink becomes repulsive and unsatisfying to the palate it has lost much of its value. Food should tast well and appeal to all our senses in order to obtain the most good from it. The boquet element is worth something. No one article of diet can satisfy our physical needs. We need just a little of a great many different foods.

Should tobacco be tabooed? Not necessarily, although it should be taken in moderation. No positive evidence has been adduced to show that tobacco shortens life. It is a filthy habit and may warp the appetite and cause a desire for whiskey; again it may keep one from indulging in ardent spirits. Who knows? All are agreed that we would be better off without it. The doctors in mighty assemblies condemn tobacco—midst fumes of My Lady Nicotine. Tobacco raises arterial tension and this is a condition not to be desired in the aged. On the other hand, tobacco exerts a soothing and sedative and altogether satisfying effect upon those addicted to its use, so that the untoward action of it may be in some measure offset. It is probable that a limited and judicious (?) indulgence in tobacco both in the form of smoking and chewing has no severely baneful effect upon those of mature years and especially of those who are getting well along in years. Moderate gum-chewing is a good practice for elderly people, although many might regard the habit unesthetic and not nice. If the teeth contain cavities into which the gum may lodge this may be somewhat harmful, but it is presumed that the teeth are kept sound and intact. The chewing of gum helps to keep the mouth secretions active and cleanses and moistens the mouth; chewed about meal time the salivary glands are stimulated, thus aiding this valuable adjunct to digestion.

What shall we say of booze? It is a sort of unwritten law among medical men that they themselves—and perhaps their patients as well—may indulge in alcoholics with impunity after the age of fifty. The habits are well-established at this time and no new ones are likely to be annexed; moreover a downgrade metabolism is now about to set in and a certain measure of stimulation is to be advised. Personally, I would be reluctant to advise any patient to take alcoholics as a beverage unless there was a mighty clear-cut indication for it. We see a great deal of depravity in old men and paying too much court to Bacchus is inclined to make them want to divide up their respects with Venus and the other gods and goddesses of shady reputation. I believe that we would be far better off without alcoholic stimulants as we finish our journey. Moderate indulgence in such stimulants could hardly be called objectionable from a medical point of view, but the bounds of moderation are so easily overstepped even by those who are old enough to know better. Alcoholics are less objectionable if taken in conjunction with the meal or near it.

As one grows older he should sleep more; the reverse is too often observed. The hardening of the blood vesels and the changes taking place in the brain cause an alteration in the cerebral circulation which tends toward insomnia. The elderly individual is inclined to waken early. This is partially due to habit and may to some extend be obviated. Day naps should be taken and the habit of sleeping late in the morning is to be encouraged. The nerve cells and ganglions are replenished with energy only during repose. Sleep and an abundance of it is necessary to restore nerve tone and take the kinks out of jaded nerve fibres. If, in a word, we live quietly, peaceably, sensibly and above all *slowly* we may reasonably expect to attain a happy and hearty old age, even beyond that which was once decreed as the allotted span.

RECTAL HEMORRHAGES.

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BLEEDING from the rectum is often the only symptom which prompts the patient to consult a physician. The diagnosis of hemorrhoids, as given by the patient, is accepted too generally as sufficient. Bleeding from the rectum is so commonly associated with hemorrhoids that one is apt to be careless and fail to make either an ocular or digital examination.

Why the average practitioner will permit his learning and judgment to be laid aside for the opinion of the layman in such instances is hard to understand. The gynæcologist never fails to be suspicious of malignancy during middle life, if irregular bleeding from the uterus is called to his attention. Blood may be found in the stool, when associated with severe catarrhal diseases of the colon or rectum, internal hemorrhoids, fissure in ano, polypi, ulcer of the rectum; with dysentery, prolapse, malignant and non-malignant growths, and erosions of the mucous membrane, due to stricture or impacted feces.

Besides these, constitutional diseases such as typhoid fever, yellow fever, and malaria may be associated with loss of blood from the rectum. Some cases of anæmia, purpura, scorbutus, kidney and heart diseases, where changes in the blood occur, will also present this symptom.

The origin and diagnosis of blood from the stomach or small intestine will not be included in this consideration of rectal bleeding as it is beyond the scope of this paper further than to say that coagulated blood from the upper portion of the alimentary canal would be incorporated with the digestive residue, while blood from the lower portion is often evacuated independent of the fecal mass in the form of a slight or severe hemorrhage.

Internal hemorrhoids when eroded are probably the the most frequent source of bleeding and are responsible for most of the mistakes in diagnosis. Fissure in ano and ulcer are the next frequent and are quite common, but permit me to emphasize the fact that their presence does not conclusively exclude the possibility of the co-existence of rectal cancer.

Adenomata of the sigmoid and rectum are more frequent than is suspected, and in the early stages give the ordinary symptoms of rectal bleeding, but later present a picture of sepsis (septecemia) simulating that of cancer long before a malignant degeneration has occurred. These growths, when extensive, irritate the intestinal canal so greatly that a constant discharge of blood, fecal matter, and broken down tissue takes place. These non-malignant growths are too often allowed to progress to malignancy.

Cancer is found more frequently in the rectum than in any other portion of the small or large intestine, and when we consider the advantages of early operation, it seems that more care should be exercised to recognize this one malady before involvement of the surrounding tissue and organs has taken place. Early operation is most promising in either an attempt at radical cure or the prolongation of the patient's life.

The symptoms of this disease are at first vague. The patient complains of fullness in the pelvis or bowel, due to pressure, according to the location of the growth. The pain in the early stages from carcinoma is very little excepting at the margin of the anus. When the growth is situated higher up the fullness of the rectum is complained of more than any other symptom and there is a constant desire to dislodge the mass. Stricture, hemorrhoids, fissures, or pruritis ani may be present at the same time. Blood as the result of the ulceration and inflammation is quite early in its manifestation.

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MANAGEMENT OF THE PUERPERIUM.*

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THE most important considerations in the management of the puerperium are the prevention of hemorrhage and the prevention of infection.

Especially during the third stage of labor is the

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latter to be most feared, for during the interval between the birth of the infant and the delivery of the placenta, the hands of the physician and nurse are apt to come in contact with objects, which are not sterile and unless scrupulous care is observed to resterilize them before attempting the removal of the afterbirth, or when a search is made for injuries, contamination of the patient may result.

Proper treatment of the third stage also prevents the occurrence of hemorrhage. For at least an hour after labor close attention should be given to the uterus, lest it becomes soft and relaxed. The nurse must be instructed how to map out the uterine body through the abdominal wall and to recognize the difference between a firmly contracted uterus with the fundus just above the symphysis and a relaxed, flabby one anywhere between the umbilicus and the pubis. She should also be shown, when contractions are absent, how to restore and maintain them by grasping the fundus between the palms of both hands, making firm pressure and using gentle massage, but never hard enough to force the organ downward and backward towards the floor of the pelvis. No forcible attempt to deliver the placenta should be made for at least half an hour after the birth of the child. This gives the uterus time to rest and to recover itself for subsequent contractions. Opportunity is also given for the formation of clots in the sinuses of that portion of the uterine wall from which the afterbirth has been detached and permits of its gradual and normal separation. Should hemorrhage take place from either partial or total casting off of the placenta, a Credé expression with vigorous massage should be employed until firm contraction is again obtained. This is accomplished by grasping the uterus firmly in the palm of the hand with fingers behind and the thumb in front, when the exercise of circular compression will usually force the placenta out of the uterus. This failing, the uterus must be invaded, the placenta detached and any membranes or blood clots removed. A full dose of ergot may now be given and a too free bleeding further controlled by vaginal or intra-uterine douches of normal salt, acetic acid (2%) or iodine solutions. While waiting for the delivery of the placenta, the vagina and perineum should be irrigated with hot sterile salt solution to remove all blood clots; after which careful examination must be made for lacerations, which, if found, should be repaired as soon as practicable. When the tear is confined to the vaginal mucosa or fourchette and is slight, the sutures may be introduced while the patient is still under the anæsthetic, but not tied until the expulsion of the placenta. If the patient is exhausted or there are other unfavorable conditions present, the repair of the lacerations may be left until the next day. The sutures usually employed are chromic or silk worm gut. They should be placed deeply so as to approximate the torn edges of the muscles and tied loosely to avoid cutting through if edema takes place. A warm bichloride dressing may be kept over the vulva for a few days, changing it every four hours or oftener if it becomes saturated. Lacerations of the cervix are left until a later time, unless extensive enough to cause hemorrhage, when a catgut suture taken high in the angle of the torn cervix usually suffices.

After the third stage is completed by the delivery of the placenta and membranes and all bleeding has ceased, the patient should be cleaned as thoroughly as possible and made comfortable by the removal of all soiled clothing and bedding. The patient may be allowed to assume whatever position she prefers, but should be cautioned against lying upon her back for prolonged periods in order to avoid possible retrodisplacements.

Post-partum douches are contra-indicated where only one or two exminations have been made, but if the uterus has been invaded either by instruments or the hand for examinations, an antiseptic douche, preferably of normal salt solution in which there is a dram or a dram and a half of tincture of iodine to the quart, should be given hot as can be borne. After each evacuation of the bladder, the vulva should be irrigated with hot sterile water and the dressings changed.

Regarding the question of the abdominal binder, it will be found that a certain number of patients have never used one and do not care for it. Some, however, insist upon its application, believing that it will restore their figure to its former proportions. Others again assert that a binder adds materially to their comfort giving them a feeling of security and support not to be had otherwise. Especially is this true of women with lax abdominal walls. Opponents of the binder claim that the support it gives is purely imaginary and that it is apt to make pressure where it is not wanted, thus disturbing the normal relations of the pelvic viscera. It is difficult, however, to believe that a malposition of the uterus can be caused by its use. The patient's wishes may therefore be gratified if she desires to wear an abdominal binder after labor.

Ergot.—For years it has been my practice to order a full dose of ergot after the completion of the third stage of labor repeating it every six hours for the first day or two and giving lesser doses throughout the first ten days of the puerperium for the following reasons:

1. It produces contractions and constitutes a physiological hemostatic.
2. By keeping the uterus well contracted it lessens the possibility of absorption of septic material.
3. It promotes and hastens involution.

Should the after pains be aggravated by its use, it may be combined with opium.

Secondary Post-Partum Hemorrhage.—A hemorrhage occurring later than 24 hours after labor is usually due to the retention of a fragment of placenta or a blood clot. The indication is to remove it either by the fingers or by a dull curette and follow with an intra-uterine douche. If the third stage of labor, however, has been carefully conducted, the principal factors of secondary as well as primary, post-partum hemorrhage will have been eliminated, namely, retention of placental tissue, blood clots, or membranes. Here, as in primary hemorrhage, the indications are to make a vaginal examination, explore the uterine cavity for retained secundines and remove the same at once with the fingers if possible, and if not, with the dull curette. Post-partum hemorrhage occurs in about 5% of all cases. Later on hemorrhage ordinarily indicates subinvolution, and is not infrequently associated with retained secundines.

Diet.—In normal cases I incline to a more generous

diet than is usually advised in the books. There seems no good reason why a woman who has passed through an exhausting labor, should be fed upon "slops" instead of wholesome, nutritious food, unless there is a disinclination for much nourishment on her part. As soon as the bowels have acted, if there is a returning disposition to eat, I let the patients have almost any plain food they desire.

Bowels.—The bowels should be moved not later than the third day. The drugs usually employed are castor oil, rhubarb and magnesium citrate. Since it matters little what cathartic is used, one can often please their patients by prescribing their accustomed laxative.

Breasts.—Proper care of the breasts should be started five or six weeks before confinement. The nipples should be examined to see if they are fully developed or not, and if found retracted or cracked, much can be done by manipulation to help develop them, especially towards the end of pregnancy. I advise my patients to massage them daily with some oily preparation after which to apply an astringent lotion. This tends to harden them and lessen the danger of maceration during nursing. If they become irritated or cracked with suckling, the application of nitrate of silver to the eroded places or the temporary use of a nipple-shield will often give prompt relief. About the third day the breasts begin to fill up and at times become so engorged as to give much discomfort and some immediate relief is demanded. Since this engorgement is probably vascular, the most rational treatment, it seems to me, is to support the breasts with a carefully adjusted bandage and if necessary apply ice. This, supplemented with a dose of magnesium sulphate, will be about all that is required.

Breast-infection which comes on somewhat later, is readily recognized by the usual signs of inflammation such as localized pain, redness, swelling and extreme sensitiveness, accompanied by a chill and a rise of temperature. This condition usually subsides when the breasts are properly bound up, covered with an ice bag, and given complete rest. A scant supply of milk may often be increased by administering plenty of good nutritious food, cereals with cream, preparations of malt, cod liver oil, etc. Dram doses of syrup of calcim lactophosphate well diluted, t. i. d. or nutrolactis in four dram doses, t. i. d., are of great value.

When excessive milk secretion occurs, diminishing the amount of stimulating food and lessening the intake of fluids, will do much to correct this tendency. But drugs are also essential; prominent among which are belladonna and potassium iodide, with local use of extract of belladonna or atropine, combined with glycerine. The use of coffee morning and noon has been said upon good authority to likewise lessen the flow of milk.

When for any reason it becomes necessary to suspend lactation, paint the breasts with fluid extract of belladonna, protect the nipples with sterile cotton, and immediately after the breasts are emptied bind them up tightly and keep the bandage tight until the secretion ceases. The patient should be kept on a dry diet, given a saline every morning, and if there is pain present, ice may be applied.

Attention to the bladder is most essential; patients must not be permitted to go too long without urinating, lest the bladder become over-distended, and a condition results in which they are unable to pass their water without the aid of a catheter. This practice is to be deprecated and only after repeated attempts to void naturally, should a catheter be employed. The late Dr. Thomas used to teach us to let the patients sit up in bed to urinate when there was no contra-indication, as the upright position also favored the expulsion of blood clots from the vagina, thus lessening the chances of putrid accumulations. It is better to take a moderate risk by permitting your patients to sit up, than subject them to the danger of unskilful catheterization and consequent introduction of pathogenic germs into the bladder. Oftentimes when other measures fail, a hot rectal injection will bring a bladder evacuation.

When shall we let the puerperal woman get up? This depends largely upon the involution of her uterus. If her condition is normal and she is nursing her baby, the uterus, as a rule, will be contracted by the ninth day and there should be no hesitancy in letting her up. But if on the other hand, she has lost her child in confinement and her uterus has not contracted well, no sane man would think of doing so. When a woman does not nurse her baby, the lochia persists, and bleeding may continue for three or four weeks. Sometimes the uterus on the tenth day is four or five times the weight that the vagina is supposed to be able to sustain. If she is allowed to get up too early when in this condition, a more or less degree of uterine procidentia may result. The rule is then to watch the uterus, and if there is a disposition to relaxation, to keep the patient quiet. If on the other hand it is well contracted, she may be allowed to move about.

Subinvolution and Displacements.—At the end of the fourth week a careful physical examination should be made, and if the uterus is found large and subinvoluted it should be treated with tampons of either glycerine or glycerite of tannin, or with douches of very hot water two or three times a day. Internally I give ergotin with strychnin and cannabis indica, t. i. d.

It is not uncommon to find a retrodisplacement after confinement and this condition is always to be suspected if there is backache and a return of the lochia after the patient is up and about. It is readily diagnosed bimanually, and is best treated by replacement in the knee-chest position, and retained in place with glycerine tampons. When the displacement recurs, or has remained undiscovered six or more weeks post-partum, the treatment is to replace the uterus and secure it in proper position with a pessary. A few minutes spent in the knee-chest position, or lying upon the abdomen a while every day, seems a wise prophylactic measure.

There are many other items in connection with the puerperium that could be taken up with advantage, such as the kind of catheter to employ; the immunity derived from more frequent use of rubber gloves; when the child should be put to the breasts and how often; how early the patient should go out or put on her corsets, etc.; but I have already exceeded my time, and furthermore this paper was not written with an idea of advancing anything with which you are not already acquainted, but rather to refresh your mind with some points that may have passed from your memories. These I will leave for others to bring out in the discussion.

63 East 80th Street, New York.

WHAT CAUSES CONSUMPTION?

BY ELMER LEE, M.D., NEW YORK.

PATENT disease forming ingredients from imperfect feeding, are present in human beings, with few exceptions, as to age, or time, or place, under past, or present modes of living. If waste accumulates in bodily tissues, disturbance to health follows.

The tissues, soft and hard, of the human body, if not continuously saturated with a healthy blood, are subject to injury, dissolution and disease. Blood in circulation, keeps flesh and bone in a state of preservation, supplying tissue cells with new life material, and removing waste, in the form of fluids, gases, and sediment in solution.

Flues or vents, coming to the surface, let out gas and vapor. If effete deposits, within, increase too fast, for any reason, tissues are choked, and the result is sickness, or death.

If the blood and lymph currents gum up, and can not get through the veins and arteries, the organism indicates such stoppage by nervous sensations, usually unpleasant. If the proper and complete treatment is at hand, the system recovers, with small resulting damage.

Few there are, who understand what is wrong, or what to do, at the right moment, to restore the disordered body to health. Human education, even in the college trained graduate, is incomplete, for, the art of preservation of health, the first essential, and most important thing in life, is not adequately taught, the teachers, themselves, not comprehending it.

As resistance of human tissue and blood, in different individuals, is uncertain and variable, it follows, that the effect of vito-chemic changes in the body, cannot be foretold, with precision and certainty. What affects health, unfavorably in one case, might pass without notice, in another.

Retrogressive vital activity may conceal itself, and its effect upon the human economy, in the cells, or between them, where the resistance is least against intrusion, may not be suspected in the early stages of invasion. Sediment, or tubercle, may be scattered through the body, yet, it is only at certain weakest places, that disintegration begins, often not regarded as serious by the patient, neglected, and finally, discovered after extensive damage to health.

Tuberculosis is, first, disordered vito-chemic action, arising from mal-nutrition, or some effect of it; second, a deposit, or infiltration, of slime, from choked circulation and foul blood, with deposits of sediment, which we call tubercle.

The fine blood vessels, and interspaces between the cells, jammed with sedimentary plugs, congestion, accompanied with nervous effects, later condensation and granulation, precede death to cells, disintegration, dissolution, and organic change. Tuberculosis, in a first or beginning stage, later, consumption, obvious to everyone.

It is clear that, as human organizations differ, symptoms of disease, in different persons, of different ages, and under surroundings, that are different, vary in prominence, intensity, and effect. Initial stages of deep seated causes of disease, exist a long time, in each case, before recognized, or treated.

In later stages, everyone is able to detect the symptoms of consumption. What is to be done, who is the safe advisor, does any one case get competent care, or attention? Seldom. Owing to fallacious ideas, as to cause, contagion, or infection, alarm and confusion ensue, and, on account of diversity in the plans of treatment, there is much perplexity.

It is not safe to say that there is but one treatment, for, as many have seen, patients do recover, and escape death, from consumption, under various methods, or, no methods of treatment. How is this explained?

Life is elastic, resistant, capable of hard knocks and rough usage, even though abused and misused, frequently, it will not down, again, the thread is so tender, that life flickers out upon the slightest strain.

Strength, safety, and power, emanate from healthy intestines, if impaired by bad foods, poisonous beverages, impure drinks, vitality is weak, disease certain. Bad foods, and low nutrition compose the soil and roots for every tuberculous disease.

Tuberculosis and Syphilis.—The former does not predispose to syphilis, though the latter does to tuberculosis, in the opinion of Gouget (Jour. des practiciens, Nov. 26, 1910). Laryngeal or tracheo-bronchial syphilis has actually resulted in the implantation of the tubercle bacillus, although this is not usual; it is rather the debilitative effects of syphilis which predispose to tuberculosis. Patients in the secondary luetic stage are much more susceptible than old cases, unless the latter are attended with suppurations, tabes or general paralysis. Sergent concludes that tuberculosis is intimately bound up with syphilis, although the latter may be only a remote antecedent. The influence of syphilis is here less than that of alcoholism. When tuberculosis attacks a syphilitic a mixed lesion does not result. Each disease has its own sphere; Gouget quotes cases in which the same lung showed tuberculous nodules at the apex and syphilitic nodes at the base. In a patient already in an advanced stage of tuberculosis an intercurrent attack of syphilis will hasten the end. Sergent believes that the engrafting of syphilis upon a tuberculous case hastens the beneficent tendency to sclerosis; Gouget considers, however, that this can only happen in the tertiary stage, when the patient has already passed through the earlier phases of the disease. In general terms, tuberculosis attacking a patient in the secondary luetic stage makes a bad prognosis — oftentimes an acute (galloping) consumption. But the tendency to sclerosis in later syphilis delays the progress of tuberculosis; and high arterial tension in tertiary syphilis is also favorable. In the treatment of these concurrent conditions, mercury is not contraindicated by the existence of tuberculosis; but here Gouget would not give mercury by mouth, but instead daily injections of some such soluble salt of mercury as the benzoate or biniodide. The ordinary treatment of tuberculosis is, of course, also carried out.

Fewer Fogs in London.—A score of years ago there were 55 foggy days in London during the winter months; whereas there were only eleven during the same period of last year. Sir James Crichton-Browne considers "the fog fiend has been scotched, if not killed;" and he attributes the result chiefly to improved sanitation.

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THE DRAPER CENTENARY.

DAGUERRE, in 1839, was the first to have photographed inanimate subjects; but almost immediately thereafter Draper made the first "Daguerreotype" of the human countenance — that of his sister, Miss Dorothy Catherine Draper. Nor was ever an art so charmingly initiated, as all will agree who have seen reproduced this first portrait of the gentlewoman long since passed away. Draper's photographic mechanism was a cigar box and a lens from a pair of spectacles. Thereafter, aided by Morse, he made many photographs of notable people who visited in wonderment their studio on the roof of the old New York University Building in Washington Square. Draper took and developed the pictures; and the great discoverer of telegraphy posed the sitters in an artistic setting, adjusting their occiputs to the tripods of those iron stands many of us will still recall. And there were superstitious folk who would not be prevailed upon to sit—as the negro servant, who wouldn't have one of those "dagger things" made on him for all there is in heaven, " 'cause I'se skeert at it."

Daguerre had doubted if the living and the sentient being could have the features reproduced; he was obliged to expose his plates for twenty minutes to half an hour in bright light. Only buildings, statuary and unmovable objects had survived the exposure. It was Draper who made the process feasible for human reproduction. He shortened the process by brilliantly illuminating the face, using to this end large concave mirrors that focussed the sunlight full upon the sitter; and since the heat of these burning glasses would be blinding he placed thin, rectangular glass tanks containing solutions of blue vitriol between the mirror and the countenance. Thus, only the sun's blue rays passed through, the heat and other light rays being absorbed; the blue rays, being the most active in producing chemical changes, readily and successfully affected his Daguerreotype plate. He thus got a portrait in about twenty seconds. Draper's next great achievement in photography was, on March 23, 1840, to have taken the first photography of the moon; his plate was exposed twenty minutes and the image was about an inch in diameter. Throughout the civilized world this created the profoundest sensation.

Humankind at large will account its greatest gift from Draper to have been human portraiture; for thus to have stirred the emotions were ever accredited higher than any merely utilitarian work of science. But his professional descendants will perhaps be most grateful to him for several most notable demonstrations. Capillary attraction was the subject of his first researches; and from them arose his discovery how the blood is oxygenated and carbonated, a mystery which had theretofore baffled the physiologist. He demonstrated, by means of films of thin material and soap bubbles, the essential parts which capillary attraction and the law of the diffusion of gases play in blood purification. A pioneer in the science of prismatic analysis, his discoveries in this field covered a wide range. Draper anticipated the incandescent light of Edison when he suggested as a standard for photometry for white light, a piece of platinum foil of given area and thickness heated to incandescence by an electric current of specified strength.

Dr. Charles L. Bristol, a student of Draper, extolled his gentle and deliberate manner when lecturing; he spoke in a moderate tone and enunciated clearly; his language was remarkable for its wealth of strong Anglo-Saxon words, whilst it was sparing in Greek or Latin terms. When it was necessary to use a long word because of its technical value he would explain it, and perhaps apologize for it by saying that every human occupation had its slang—its words of special meaning that were short cuts—and that it was always wise to know them. The illustrations of his lectures were numerous and put before the class in so masterly a fashion that definite impressions were invariably left; his explanations of the apparatus, the process, and the significance of the results attained were always so full that the veriest tyro would have no difficulty in comprehending the application. At the conclusion of a lecture on spectrum analysis, in which he set forth the profound and far-reaching results of its application to the determination of the composition of the distant stars, and the detection of the presence of the merest trace of a substance in a grain of sand, some students asked how he could explain so weighty matters in so simple language. And Draper answered: "Every great truth may be told in simple language. I am afraid of a truth, so-called, which comes to me in words I do

not know well. I grant that one must use technical terms in setting forth the dates of his investigations, and such words are well known to all workers in a given subject; but the conclusions, as far as they embody a general truth, need never be put in aught but plain speech."

Draper's activities were most varied; he was one of those many-sided nineteenth century giants; not only great in pure science, he wrought amazingly also in other fields. He was an eminent historic writer, having written a history in three volumes, of the civil war. Among his more than hundred books, monographs and addresses was also his *Intellectual Development of Europe,* to this day accounted a historic and philosophic marvel. If only for the manner of his writing—its incisiveness, clarity, never-failing charm—the professional man who has not yet done so should now become acquainted with at least this work. To emulate such style as this were to approximate very nearly indeed perfection in the art of literature.

Such were the deeds, such was the life work of Dr. John William Draper, the centenary of whose birth was on May 5th last celebrated in The New York University.

PLAGUE PSYCHOLOGY.

A GRUESOME picture is presented by the *New York Evening Post* of the Chinese New Years Day festivities (which fall on our January 30th), in the Manchurian town of Fu Chia Dien, near Harbin. Since early in November last has the plague been reaping its harvest in that region. Four thousand and more of the twenty odd thousand people of Fu Chia Dien had succumbed by New Year's Day; and it was then anticipated that half or more of the remainder —maybe the whole of that fated community—would be doomed before the disease expended itself. But for all that the day was duly celebrated.

Here a house was gaily adorned with bright red paper pasters, gilt-lettered, with commemorative banners and red and green paper flags; next door the yellow sign of the Sanitary Bureau was pasted up, marking the dwelling "unclean" and sealing it up—"eight dead, two dying" therein. A policeman rides past, his horse's tail being brightly decorated with green and red streamers; near by a shop-keeper bursts into the street and laughingly scares a group of bystanders by flinging a package of lighted firecrackers into the air. The dead are carted away; and those who have loaded them on the wagon do not walk, but sit congenially alongside the infected corpses. Policemen are kept on guard outside suspected houses; despite most positive orders and warnings they go, immediately the superior officer has turned his back, into the plague-stricken house; for therein it is warm. Certain suspects are quarantined; one among these has forgotten his hat and, finding it cold without, starts back for it; "here, take mine," cries an obliging coolie attendant, who has perhaps later had his property returned infected with germ-laden fleas. The carters of the dead joke among themselves: "It is your turn now;" "no, it will be yours first;" and the like. Thus has the bravado stage been reached among these people, who in any event are wretched and ignorant by nature; fortunately for them they have no nerves, no exquisite sensibilities, else a greater fear would be upon them.

Then, as the epidemic proceeded, another psychological phase developed. At first there was compassion, mutual helpfulness; but with the inevitable deterioration in the normal psychism of the townfolk heartlessness and brutality supervene. One does not note this on the festive, decorated main street; but in the side streets and crooked alleys (precisely as during the mediæval Black Death) one finds in the plaguestricken families brother standing against brother, father against son. One member is stricken; for several days all is well enough; but suddenly comes the chill, the high temperature, the vomiting of blood: then is the wretched sufferer forced out to die in the streets; starving, he staggers about, falls and dies, either by freezing or of his disease.

In the early days of the epidemic the quick kept the bodies of their dead, to hold grand ceremonials over them; immemorial custom in China has decreed that everyone, even the homeless beggar, shall have a coffin when he dies. On this New Year's Day there are still coffins, stacks of them, in front of carpenters' shops on the main street; but they are now rough and thin, not the usual heavy receptacles that require for their lifting from eight to a score of men. And even so there are thousands that may not be coffined. Outside the town on this festive occasion more than two thousand bodies and coffins lay atop the frozen ground, silence pervasive everywhere. The coffins from a distance looked well covered; but on approaching one saw here an arm stuck upright out from the wood, there a naked leg protruding. For many bodies there were no coffins. Yet near the pile of which he was soon to become a member one outcast was observed "kneeling, worshipping, half falling in his weakness, as he bowed his head and rose again, before the grave of an ancester."

Finally authority was given to burn all the dead; here indeed was a momentous concession, a veritable revolution in cherished ideas. Through many centuries the thought of destroying the bodies of one's own kin has been abhorrent to the Chinese, even some of

the younger, foreign-trained medical men on the staff shuddered at the idea.

History repeats itself in this description. At the time of the Black Death the terror of the plague was everywhere. Men's vital powers were so depressed by anticipation that they were already half-dead before they were attacked; the parched throat, the pulse quickened by nervousness and anxiety, were mistaken for the fatal symptoms of the infection. Men and women feared to look into each other's faces, lest the "muddy glistening" of the eye should betray them; lest they be detected in feeling for the little hard kernel, no bigger than a pea, which moved with the touch under the skin of the armpit, the sure precurser (it was thought) of death. Who would then be so irrational (wrote Warburton) as to throw good life after bad by nursing a dying friend, when infection lay in the breathing of his last sigh, in the farewell pressure of his hand? Thus the nearest and dearest ties were dissolved, the calls of kindred and humanity neglected; the sick were left to die and to be carted to the grave by hirelings. Thus were many driven, by sheer terror, away from human habitations; and perished miserably in the solitude of the fields.

Thus also Hecker: Compassion, courage and the nobler feelings were found in but few; cowardice, selfishness and ill-will, with the baser passions in their train, asserted their supremacy. Great moral degeneration obtained. Parents and children deserted one another, thieving and murder were abroad; the sick and the suspects were killed. The plague-stricken were abandoned by their families; mothers would not assist their dying sons; "the husband dared not approach the dearest object of his affections, who requested from him a drop of water, in a voice the most tender and supplicating." One shall find testimony in precisely the same tenor in Gibbon, Petrarch, Boccaccio, Procopius, Creighton, Michand, Gowen and others.

STATE AID TO CANCER RESEARCH.

THE legislature has appropriated $65,000 to build a cancer hospital to supplement the equipment of the Gratwick Laboratory. The site has been donated by Mrs. Gratwick and the entire property is deeded to the State. As a plain business matter — a form of insurance, as it were — we believe it is worth three-quarters of a cent a year for each inhabitant of the State, to have systematic investigations carried on, in the hope of discovering the cause, diagnostic reaction and cure of cancer.

Cancer has been clinically well recognized from the earliest periods of medical history. It has probably existed in one form or another for much more than the span of human habitation of the world. Hundreds of years of conscientious and skilled, if not in the modern sense, scientific, endeavor have failed to throw light on its essential nature, much less to effect a cure. A limited number of cancers are "cured" by operation and this achievement must be credited to the last two generations of medical men but it is obvious that the sacrifice of a cancerous area does not constitute a *cure* in the proper sense, any more than the execution of the death sentence on a criminal effects a reform.

Using the word cancer in its most limited human sense and accepting the most conservative estimate of its duration as furnished by mummies, cancer is a problem 5000 years old, whose solution was scarcely begun 50 years ago and the progress in the fifty years has been very slight. The people and their legislators should appreciate the magnitude of the task and should be prepared to spend three-quarters of a cent or even a whole cent apiece, a year, for at least five years, without expressing impatience if the investment does not pay in immediate practical results.

On the other hand, the Laboratory staff should clearly understand that while the people and, especially the medical profession, are keenly interested in the progress of the investigations, they do not want any more germs that can not be substantiated nor prelegislative critical periods in pending experiments.

As a part of the machinery of the State, it is appropriate that the work of the Laboratory should be broadened. Our knowledge of cancer is so slight and we have seen so many striking illustrations of absurd theories blossoming out into actual accomplishment, that it is justifiable, indeed, a duty, to allow the utmost freedom to the investigators and to follow up every hint, however unpromising in nature or in source, that may be presented.

It is easy to sneer at cabbage cancer, tree cancer, fish cancer, etc., to deride the influence of salt, meat, raw eggs, fertilizers, earth worms, etc., either in sensitizing tissue cells or in carrying parasites, to exclude geologic and meterologic study as not pertinent to the problem. We may claim with much reason that epidemics of neoplasms in caged mice present little analogy in pathogeny, even if they do in histology, to human cancer and we may be pardoned for holding higher hopes of investigations based on a large mass of clinical and post mortem human evidence, than of purely laboratory experiment in which the element of human material is minimal. But, any analogy hint, stimulus of imagination, may prove to be the key to the mystery of cancer. We would plac

no restriction of a short-sighted "practical" nature, no time limit, not even an arbitrary financial limit on the Laboratory staff, but, on the other hand, with due regard to the necessity of working with some system, we would emphasize the fact that, as a State institution, every practicable opportunity should be given for the working out of ideas presented by medical men and biologists generally.

THE COMMON DRINKING CUP.

THE World "do move," as well in the little as in the great things of life. Recall for example the experience several decades ago of Mark Twain, who objected at the hotel desk to the filthy roller towel in the wash room; how the irate proprietor told Mark: "You're the fiftieth man to use that towel and the first man to kick!" He who goes to the barber to be shaved need not now greatly fear the barber's itch and the other hideous skin infections of but recent years; in many shops his occiput will now rest over a sterile sheet of paper, his face will be lathered with a sterilized brush, scraped with a sterilized razor, "steamed" with a sterilized towel. Enterprising railways and steamboats are now substituting for the common drinking cup the paraffined cup, costing one cent, to be used only by the individual, who throws it into the waste basket conveniently placed when he is done with it. No longer should the railway drinking glass be permitted, the drinker's saliva whitening its edge, or some feminine zoophiliac giving dear little Fido to drink out of it.

It is, again, refreshing to note that great business corporations are establishing decent and adequate lavatories for their employees, doing this either on their own initiative of in conjunction with the health authorities of their respective communities. No more the roller towel is seen in these up-to-date establishments; but in its stead individual towels or the paper roller from which an excellent substitute for the cloth towel is stripped, to be thrown in a waste basket as used.

The "cup of death" has been gruesomely (but with little exaggeration) pictured as a skull with the part above the eyebrows sawn off, a handle fashioned to the occiput, from which a chain is attached to the drinking fountain. Abolish everywhere this cup of death; and in its place provide the jet which bubbles up on pressure so that no part of the drinker's lips comes in contact with the mechanism! In public schools and in many other places this jet is now being adopted. Is this a trivial matter? By no means! The common drinking cup is demonstrably the means by which dreadful contagions are spread. Dr. J. P. Simonds* well observes that in syphilis, diphtheria, scarlet fever, measles, whooping cough and influenza the nasal and buccal secretions may be fairly reeking with the germs of the respective diseases. And those without any symptoms at all may nevertheless transfer the pathogenic organisms. How many a case of diphtheria, of tuberculosis, of *lues innocentium* has thus been transferred! The mouth is constantly moist, of an equable temperature somewhat higher than that of the rest of the body; thus it is a ready-made hotbed for microbic growth.

Among all inanimate disease-spreaders few, if any, will equal the common drinking cup in effectiveness. Consider the deposition upon such a cup in a public place after several hundred people have used it during the twenty-four hours. To particularize: "Certain of the contacts of everyday life (contagion from drinking cups, kissing and the like) may account for many extra-genital chancres." To this observation of Osler we may add that syphilis may be transmitted not only *to* an innocent person, but also *from* an innocent person—from one who does not know he has the disease or who thinks that its active manifestations are past. The mouth, tongue and lips are the seat of the most highly contagious of all syphilitic sores—the mucous patch; thence the secretions from the mouth of such a person would be especially profuse in the luetic germs, and one such could hardly drink from a cup without depositing thousands on its edge.

Fully virulent diphtheria bacilli have frequently been found in the throats of perfectly healthy people. Moreover, the continued presence of virulent diphtheria bacilli in the throats of patients after the disappearance of all symptoms of the disease, has been repeatedly demonstrated—even after eight months. Such bacilli have been found on drinking cups, candy, slate pencils and the like; on slate and lead pencils and on paper money they have been found alive after several weeks; why not also on ordinary drinking cups?

Measles is generally transmitted by direct contact; yet it may be transferred upon objects handled by a patient, such as the drinking cups.

Walking scarlet fever cases are responsible for many outbreaks of this infection; and such a patient may transmit the disease by a public drinking cup.

The advanced consumptive emits several billion tubercle bacilli in the twenty-four hours; any one of these germs is a potential agent of infection. Moreover, the saliva in the consumptive's mouth is oftentimes loaded with tubercle bacilli. Surely we need not here dwell upon the danger to the non-tuberculous in "the cup of death."

*Monthly Bulletin (March, 1911) Indiana State Board of Health.

In Europe they do a great many things better than we. For example, in Hungary they have adopted the one man, one glass principle with the idea of preventing the spread of consumption and other infectious diseases. Municipal councils have ordained that the glasses used in cafés and restaurants shall be numbered. It is expected thus to avoid the promiscuous exchanging of glasses; water as well as the more potent liquors will thus be served customers—in numbered glasses.

POST OFFICE IMPROVEMENT.

FOR the first time, the United States postal service is practically upon a self-supporting basis. We have never regarded the postal deficit as a serious matter. A large share of it might properly have been charged against other departments of the government. At the worst, it has been a comparatively small tax on the people as a whole, in the interests of education, and as establishing a standard of what might be gotten for a small price, by general co-operation. It is especially gratifying that the service has been made self-supporting, not by raising prices, nor by sacrificing results, nor by cutting down salaries, but by careful study of the demands of the people and by attention to economic details.

The Post Master General expresses the view that one-cent postage is already in sight. With all due respect, we venture the opinion that several improvements are more needed. Among these may be mentioned reductions on special delivery and registered mail, more important still, a systematizing of local collections and deliveries so that, at least by mailing along certain specified routes, it would be possible to obtain an answer to a letter within ordinary business hours of the same day. We believe that, for the average private citizen, the prompt transfer of messages in his own city is of far more importance than the sending of mail to a distant point. Under present conditions, it costs from ten to fifty cents to insure the return of an answer to a local message in the same city, in the same day, as recourse must be had to special delivery mail, telephone, street cars or messenger. To reduce this expense to four cents would mean a much greater saving than a reduction from four to two cents on mail matter in general.

Another matter which should take precedence over the proposed reduction on letters, is the extension of the limit of weight and size and the reduction of cost on parcels of fourth class matter. For long distances, the fourth class postal rate is already usually less than the express charge. There is no reason why private corporations should virtually monopolize, for short distances, the proper function of the post office.

There is also no obvious reason why the transmission of messages by telegraph and telephone should not be in the hands of the post office of this country as they are in the case of most European countries. The inexpensiveness of such service in Europe is a surprise to the American.

There is one other reason why a general reduction of letter postage should not be made. The present difference in cost of 100% between sealed and unsealed matter means, for the average busy man, an enormous saving of time in the rapid transfer of advertisements to the waste basket. This may seem hard on the advertiser, but even the most expensive advertising in periodicals amounts to only about 50% of the cost of delivering advertisements by mail. When the advertiser resorts to the newspaper, journal or magazine, his announcement can be found by any one who wishes. There is no more reason why he should impose upon the time of the man who does not want his wares than why he should haul the passer-by into his store by force. Let him maintain an accessible shop and an accessible advertisement for the prospective purchaser. The saving of time on this one item is worth the difference between one-cent and two-cent letter postage to the average buyer of stamps.

Masturbation in little children is exceedingly difficult of treatment; females contract the habit in infancy, boys as they advance in years. Such children are sallow, hollow-eyed and nervous. They must be watched, and forcible prevention of self-abuse by the hands or by the thighs must be exercised; as children advance in years an unusual amount of firmness and supervision is essential. Bodily punishment avails little, so Jacobi finds; in any event this must not be inflicted upon the genitals, which process is like to be accompanied by pleasurable sensations. The causes of masturbation are local irritation of the genitals in the very youngest, excitation as the child grows older, feather beds, excess of animal food, stimulating beverages, rancid smegma, eruptions on the penis, vaginal and vesical catarrh, renal calculi, preputial adhesions, phimosis, oxyuris and constipation. In the treatment one must remedy such causes as these by cooling diet and coverings, attention to the kidneys, bladder and rectum, relief of external irritation by clothing, removal from the bed on awakening, cold bathing and sponging, mechanical prevention and timely punishment. Nurses should be watched, and discharged immediately upon evidence that they are handling the children. If the infant has acquired the habit, the hands must be tied while it sleeps and it must at all times be watched until it outgrows the habit. Sleeping bags are now to be had for children; a pair of such drawers impervious to the hands can be made.

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A Practical Medical Dictionary.—By Thomas Lathrop Stedman A.M., M.D., Editor of "Twentieth Century Practice of Medicine;" Editor of the "Medical Record. Octavo, pp. 1000; illustrated, thumb-indexed, $5.00; plain, $4.50. New York, William Wood & Company, 1911.

This dictionary includes the following features, some of them entirely novel: It gives the derivation of all words (when known) from the Anglo-Saxon as well as Latin and Greek. Pronunciation is indicated whenever it is not self-evident, and accent marked in all the main titles and in most of the subtitles. Tables of all the large (i. e., numerous) anatomical structures, such as arteries, muscles, nerves, sulci, convolutions, foramina, fossæ, and pharmaceutical preparations, such as acids, tinctures, etc. These are not given in tabular form across the page so as to confuse one in searching for words, but are run along in columns in alphabetical order, distinguished by different type. Other tables, such as of the elements with their symbols and atomic weights, thermometer scales, weights and measures, etc., are placed in the Appendix (with reference thereto under the catch-word in the body of the dictionary), thus not interfering with one's convenience in looking for words.

Besides the regular medical terms this dictionary includes: dental terms; chemical terms; veterinary terms; botanical terms; insurance terms; homeopathic terms; eclectic terms; biographical data (nationality, date of birth and death with the eponymic terms). All the [BNA] terms are indicated. All the preparations of the United States and British Pharmacopœias and National Formulary. Chemical symbols are given with the names of acids, salts, etc., and also entered as main titles referring back to the full name. It also includes mineral springs, giving pronunciation of place (if foreign), country, character of the water, and indications for its use; Thesaurus, that is, defining back from the English or popular terms to the scientific. Words which should begin with a capital are so printed. The spelling of U. S. P. is used.

In addition to the above special features, this dictionary embraces all the points of superiority claimed by publishers of other dictionaries.

Spirochætes.—By W. Cecil Bosanquet, M.D., Fellow of the Royal College of Physicians, London. Octavo of 152 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Artistically bound, $2.50 net.

This little book presents a study of the literature bearing on this subject.

The Spirochætes present a problem of considerable interest, and our readers will find the subject well worked out here, with a saving of much time.

The bibliography is fully given and will be found a great convenience.

Structure and Functions of the Body.—A hand book of anatomy and physiology for nurses and others desiring a practical knowledge of the subject. By Annette Fiske, A.M., Graduate of the Waltham Training School for Nurses. 12mo. of 221 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $1.25 net.

The author of this little book has attempted to weave the physiology of the human body in with the anatomy, with a view to a better understanding of both. This plan is considered an improvement upon the usual methods.

The text is clearly expressed, and the book will be found of great service.

RETROSPECTIVE

Personal Experience with a Very Restricted Diet (Rice) in Acute Inflammatory Disease of the Skin.—Dr. L. Duncan Bulkley, Physician to the New York Skin and Cancer Hospital, etc., in the *Medical Record* for January 28, 1911, says: Few realize sufficiently the important connection of diet with disease; and in regard to diseases of the skin especially the subject has been greatly neglected. And yet a careful study of individual cases in private practice, with full notes, continually demonstrates the immense importance of diet in relation to certain dermatoses, and the great benefits often resulting from a proper control of this element of therapeutics.

Thus it is that dietetics, in the broadest sense, which admittedly is at the bottom of all nutrition, is really of overwhelming influence in regard to the production of many chronic and some acute diseases, both of the skin and other organs, as close observation will continually show, and as could be abundantly illustrated; although it must be admitted that the subject has been as yet by no means accurately worked out.

Fully five years ago, January 3, 1906, a gentleman aged 45 was referred to me with an exceedingly severe attack of bullous erythema multiforme, of which he had had two similar attacks within the previous three years. He had been eating heavily and drinking champagne, and the attack had begun at 4 o'clock on the previous afternoon, with a few small papules and much itching. Within the 24 hours it had developed violently, and both hands and wrists were the seat of intense inflammation, with great swelling, and covered with small and large bullæ, more or less hemorrhagic; the intensity of the process seemed to increase even while the case was being studied. He was in real agony from the burning and itching, and intense erythrism of the entire system; the pulse was 88, hard and throbbing, and the tongue coated. He was given a laxative and an alkaline diuretic, and was directed to confine his diet exclusively, for a few days, to boiled rice, bread, butter, and water. He was seen five days later and the change was remarkable; the eruption had cooled down at once, and the hands and wrists were then about normal, except for the exfoliation from the bullæ, and he had no discomfort. He remarked on the striking difference in the course of the eruption under this treatment from what he had experienced in the two former attacks.

Exactly this same form of dietary treatment has been given to a very considerable number of patients with acute inflammatory dermatoses, mainly in private practice, during these five years, with the most gratifying effect, so that I can now almost promise that in a very short time there shall be the greatest relief; and I am positive that the results I have secured in many of these cases, far exceed anything I had previ-

ously obtained without it. In most cases there have, of course, been proper internal and external measures also employed, but in certain instances all other treatment has been avoided, and the results have been most gratifying from this dietary treatment alone, as in my own personal case.

In giving this very restricted diet to a very considerable number of patients during the past five years with the results mentioned, in no instance have they seemed to suffer physically from the absence of the ordinary ingredients of mixed diet; indeed, I have been told time and again that they feel inexpressibly better, lighter, and freer, and more able to endure when under a vegetarian diet than before.

It is understood, of course, that this very light diet is not to be continued indefinitely, although I have had one patient who preferred to persist in it for about three weeks, because of the uninterrupted well being. My common direction is that this rice diet shall be continued for from three to five days, more commonly the latter. It is well then to return to a mixed diet rather gradually, and I direct that at first a moderate meal shall be taken at noon for a few days, with the rice morning and night. If all goes well a light breakfast is then given also, the rice diet being continued for the evening meal for yet a while longer; in all this treatment caution is to be exercised against much indulgence in meat or any nitrogenous food. I find it well, in many of these cases, to keep the evening meal light for a considerable length of time, as the sleep is much better and less likely to be disturbed by itching.

It is a little difficult to give any more specific indications in regard to particular cases in which this line of dietary treatment is applicable. As may be learned from what has preceded, it applies especially to acute inflammatory and congestive conditions of the skin, which may be especially associated with faulty nitrogenous metabolism.

A word may be added in regard to the preparation of the rice, for this has much to do with the success of the treatment. It should be thoroughly cooked with water and not with milk, and generally it is better to have it dried out somewhat, so as to be flaky, by leaving it uncovered on the fire for a while. In my own case, however, I found that sometimes, when it was not so dried out, I relished it equally well and it agreed with me perfectly. The rice is freshly prepared with abundance of butter and salt, and eaten slowly with a fork, with perfect mastication; the bread and butter should also be well chewed, to secure the full action of the saliva. Water, hot or cold, but not iced, is to be taken freely, but not to wash down the food in the mouth.

Diet is a matter which does not always receive the attention which it deserves from the medical profession; but with growing knowledge and experience its exceeding great importance in certain conditions of the system is coming to be more and more generally recognized. There are undoubtedly many difficulties connected with both the study and practice of dietetics, and it must be acknowledged that explicit data and directions are not commonly furnished by our text books or instructors in medicine; as indeed there is not a real unanimity of opinion in regard to many matters connected therewith.

Posture as an Aid in the Diagnosis and Treatment of Cardiac Affections and Dropsical Conditions of Various Origin.—Dr. Henry W. Berg (Med. Record, April 8, 1911)2 cites the value of posture in many medical conditions, as, for example, the use of the Trendelenburg position for patents fainting from cerebral anemia; the reversed Trendelenburg for patients suffering from pneumonia and pleurisy with effusion; the treatment of pelvic and lower abdominal peritonitis by the Fowler position to prevent infection of the upper general peritoneal cavity. Cooper states that he has cut short an attack of biliary colic by causing the patient rapidly and suddenly to assume the knee-chest position, and suggests the relief of right-sided renal colic by having the patient lie on his right side with the head elevated, thus causing the stone to fall back into the pelvis of the kidney. Cooper also suggests the relief of simple dilatation of the stomach by the patient lying on his right side with the foot of the bed raised to encourage the gas to pass through The use of postural treatment, that is, the frequent changing of the position from one side to the other, is a frequent resort to prevent hypostatic congestion of the healthy pulmonary areas in pneumonia and to prevent pulmonary hypostasis in typhoid, measles, and other inflammatory conditions involving weakness of the right heart. P. C. Franze, of Bad Nauheim, in studying the influence of posture on the normal cardiac area found by applying the orthodiagraph to the studies of the shadows (fluoroscopic) of hearts, that "in the erect posture the shadow of the heart is narrower in width and at a lower level in the thorax. The longitudinal axis of the heart assumes a position nearer to the vertical. In the recumbent posture the reverse takes place, the heart is seen higher up in the thorax, broader in width, and lying more horizontally. Inspiration brings about analogous conditions to those present in the erect posture and expiration to those in the recumbent." These observations are confirmed by Groedel. Rudolf says the force of gravity is an important factor in the relative loudness with which murmurs are heard in the erect as compared with recumbent postures. In cases of extreme cardiac failure due to dilatation secondary to severe valvular diseases Bery places his patients in bed with the head of the bed raised as in the Fowler position, but with the patient in what he prefers to call the reversed Trendelenburg position. The Fowler position includes flexion at the knees with the pelvis forming the point of a V, the sides of which are formed by the legs and body. His patients lie on an inclined plane, body and legs extended, with the head and shoulders at the top and the feet at the bottom of the inclined plane. This greatly facilitates the accumulation of serious effusions in the legs, whence they can be drained by Southey's tubes to the extent, as in one case, of 12,000 cc. in 48 hours.

Method of Preparing Ehrlich's Remedy (Salvarsan) for Injection in Syphilis.—The method of preparation of the alkaline solution "606" is thus described by Marks (Interstate Med. Journal, January, 1911).

Into a thin, 25 cc. graduated cylinder with a ground-glass stopper about two dozen small glass beads are put. The stopper is then inserted and the whole sterllized in dry heat. In order to avoid repetition it

must here emphatically be stated that all the apparatus used in the injection and the hands of the operator, as well as the field of injection, must be thoroughly sterilized, since many of the bad results that have been reported have been due to carelessness in this direction. Nine cubic centimeters of hot distilled water are now poured into the graduated cylinder, and the mouth of the cylinder is then dried with a piece of sterile gauze, to prevent the substance from sticking to it. The tube containing the substance, after having been worked in alcohol and ether, is opened by means of a glass-cutter and the substance poured into the cylinder, which is now closed with the glass stopper and well shaken for about one to two minutes, when the substance will be found to be completely dissolved. From a drop bottle a 15 per cent. solution of sodium hydrate is added drop by drop to the solution in the cylinder, which is thoroughly shaken between each drop. After a few drops have been added to the solution the substance will start to precipitate, and this will continue until sufficient sodium hydrate solution has been added to cause the substance to redissolve. The clear alkaline solution is then ready to be injected. Care must be taken to shake the contents of the cylinder well between each drop of the sodium hydroxide solution, as in this way the clear solution will be obtained with the smallest possible quantity of the alkaline solution, and the less there is of the latter the less pain is produced. The 9 or 10 cc. composing the finished solution should be injected as quickly as possible after the preparation has been made, deep into the gluteal muscle either into one or, divided, into both buttocks.

As to the intravenous method the solution is prepared as follows: The substance is placed in a short broad cylinder in which 30 to 40 cc. of hot sterile water has previously been poured. The substance is assisted to dissolve by rubbing it against the walls of the cylinder with a glass rod. When the solution of the drug is complete it is poured into a flask containing 200 cc. of warm physiological salt solution. One-fifth normal sodium hydroxide solution is now added in small quantities, until the substance precipitates and again completely dissolves. This requires about 20 cc. for 0.5 gramme of "606." Here also an excess of the sodium solution is to be avoided, and this can best be done by shaking well the flask containing the solution after each few drops of the sodium hydroxide solution are added. The clear solution is then poured into the long glass cylinder, all the air being expelled by an assistant, who also controls the flow of the fluid. The front part of the needle is inserted into the vein, the blood is allowed to flow, the constriction above is removed, and the rear part of the needle which is attached to the rubber tubing is then inserted, care being taken that an inrush of air with the first flow of the fluid is prevented.

The advantage of the intravenous method is that very little discomfort is caused the patient at the time of the injection—only the needle-prick is felt—and no pain is felt at all thereafter. And the substance is brought immediately in the greatest possible concentration into direct contact with the parasite. These are the reasons why Ehrlich now recommends the general use of the intravenous method.

At present Ehrlich regards the matter as follows: A patient should be injected intravenously (0.4 to 0.5 gramme for women, 0.5 to 0.6 gramme for men), and this injection should be repeated from three to eight days after the first injection. If at the end of four weeks the Wasserman reaction is still positive another injection should be made. There is absolutely no danger in frequently repeating the intravenous infusion of "606" from the standpoint of hypersusceptibility. On the contrary, it appears that the patient stands the second injection better than the first.

Comparative Longevity of the Sexes.—In an interesting paper Dr. A. H. Stewart (Med. Record, May 20, 1911) discusses this question and finds abundant proof of woman's physical superiority over man when tested by length of years, the power to endure suffering and resist disease. A noted English statistician has calculated that of two children, a boy and a girl, born on the same day, the boy will have only 17 chances against 11 of living one year, while the girl will have 21 chances against 11. From 5 to 15 there appears to be but little difference, but from 15 to 19, the critical period in the life of the female, the boy will have 269 chances and the girl 277 chances of living against over death. This advantage in favor of the female increases, especially from 35 to 75, when the ratio drops slightly till after 80, when the man will have only three chances of life against one of death, while the woman's chances will be much greater.

The report of the United States Census Bureau on the vital statistics of this country for the year 1890 shows that for every five-year period from birth up to 70 years of age the death rate is much greater among males than among females. From 70 to 80 the death rate is about equal between the sexes, but from 80 to 90 there are about five woman living to four men; from 90 to 100 there are about two women to one man, and after 100 the proportion of women is still much greater.

The mystery of this tenacity of life in women still remains a mystery. Some cynic, with little regard for gallantry, has suggested that probably it was due to the innate tendency of women to have the last word.

Some hold that possibly the functional periodicity of woman, which has been generally considered to be an evidence of her frailty, may in some mysterious way be a factor in the longevity of the normally healthy woman. Man is said to travel a straight road, physically, from the cradle to the grave, while woman travels by a series of circles. In other words, man lives on a monotonous level plane, while woman lives either on the crest or in the trough of an ever-changing tide, or, as Ellis puts it, on the upward or downward slope of a curve.

Even if there be no impetus given the cells during the highest physiological intensity of this period that would tend to establish a higher metabolic cycle, the very fact of the existence of such a cycle serves its negative purpose of shielding her, for a few days at least, each month from the stress and strain of life's conflict. The fact that woman lives a more protected life, avoids the stresses and strains that favor senility, may be a factor, but it can hardly be the only factor in her superior tenacity of life. She lives a more protected life than man because she is differently constituted.

Taking it in all, nothing short of a constitutional

difference can account for the greater tenacity of life in women. Woman is a physiological miser, she accumulates energy without extending it, while man is a physiological prodigal, he extends more energy than he accumulates.

Trachoma.—Dr. S. H. Brown (N. Y. Med. Jour., April 1, 1911) from observation on the disease as encountered in the Ghetto District of Philadelphia concludes that Trachoma is an infectious, contagious disease of chronic nature, attended by most disastrous results to vision and practically incurable. The fact that a few recent cases in persons under the best surroundings have promptly responded to treatment should not be taken to invalidate this statement.

The only effective means of treating the condition is by refusal of admittance of infected patients to non-infected communities or countries.

Trachoma as it exists in America, and, especially, in Philadelphia, at the present writing, is a most attenuated form of the disease, particularly in the native born individual. These cases are of no greater importance than a host of ocular conditions, and while necessitating treatment, do not call for isolation and segregation.

Trachoma cases with discharge, in America, are more dangerous than those without but no more dangerous than any other discharging ocular affection, and not so much so as some.

In American cities, all groups of adults and children should be subjected to routine ocular examinations at regular intervals in order to detect new foci of the disease, but this does not imply that these patients should be subjected to rigorous quarantine measures. The disease is essentially chronic, and years may elapse before deformities occur, and the hardship quarantine thereby entails is obvious. Operative measures are unsatisfactory. Applications that lessen the discharge serve to retard the disease and make the patient comfortable.

An Analysis of the Clinical and Serological Results Obtained in the Treatment of Syphilis with Salvarsan.—Dr. J. A. Fordyce (N. Y. Med. Jour., May 6, 1911) from the treatment of one hundred and seventy-five cases of syphilis concludes that in the primary and secondary stages of the disease two doses of salvarsan combined with active mercurial medication materially shorten the duration of the disease. The remedy certainly limits the contagious period of the infection, and in malignant cases its effects are nothing short of miraculous. It produces a rapid healing of the existing lesions, increases the patient's appetite, and improves the body nutrition. It is possible that in such cases we have different strain of organisms which are more easily influenced by salvarsan than by mercury and potassium iodide. It is rather paradoxical, but it is nevertheless true, that the more serious the case, the more cachetic the individual, the more rapid are the effects of salvarsan. From a study of this disease extending over a period of thirty years, the author can say without any exaggeration that he has seen more rapid and brilliant results from salvarsan in this class of cases than he has ever seen from the administration of the classical drugs. The proper method of treatment is as follows: To a patient with lues presenting himself in the primary or early secondary stage, the author recommends the drug if no contraindication existed for its employment. The following procedure is recommended: An intravenous injection followed by a course of mercurial inunctions or injections over a period of from four to six weeks. At the expiration of this interval a second intravenous injection of salvarsan and a subsequent course of mercury. At the end of this treatment a rest of a month and a Wasserman reaction.

If it is negative the patient is observed for one or two months, and a second serum reaction is made. As long as it continues negative, no treatment is indicated. Should it become positive a third intravenous injection of salvarsan supplemented by a course of mercury would be the best procedure to adopt. This method offers to the patient a far better chance of a rapid and permanent cure than the use of mercury alone. Should the reaction become negative, after a single injection of salvarsan, it may be well to act on the advice of Ehrlich and repeat the injection, because of the possibility of incomplete sterilization with the encapsulation of a few spirochœtæ in the bony canals and the danger of recurrence in the nerves of special sense. In the later secondary stages of disease, as well as in the latent period with a positive Wassermann, there is no better modus procedendi than the one which has been outlined. It must ever be emphasized that the majority of patients with this infection are inefficiently treated and that their treatment is not sufficiently controlled serologically—as long as the reaction continues positive, the patient is in danger of relapse. The aim of all treatment is to bring about a clean and clear negative Wassermann reaction which continues so for at least a year.

Eczema in Infants, however slight, has a bad effect upon the organism; it is the cause of insomnia and constant irritation while the skin lesions permit acute systemic bacterial infection. Local treatment, states Rocaz (Ann. de Med. et Chirur. Inf., Nov., 1910), should be directed to removing the crusts and exudate, especially on the scalp; this may be done by applying for several days a sterilized oil, or fomentations, or poultices of potato flour. Such treatment reduces the inflammation and relieves the irritation. Antiseptic lotions are indicated only for the impetiginous type of eczema; here we employ very weak solutions (1-4000 cyanide of mercury or 1-10,000 sublimate without the addition of alcohol). A most efficacious lotion is ℞: zinc sulphate and copper sulphate āā 2 grains, saffron 40 grains, camphor water up to 1000 parts. Carbolic acid is unsuitable for children. After cleansing the eczematous surface an emollient ointment may be used; the oxide of zinc is most soothing, but in seborrheic eczema salicylic acid gives excellent results. It may be applied as follows: Acid salicylic 10 grains, zinc oxide 3 grains, vaseline 30 grains, glycerin or benzoated ointment may be substituted when vaseline is not tolerated. Sulphur is useful for eczema of the scalp when seborrhœa predominates. Intense irritation and redness of the scalp are reduced by applications of a liniment composed of lime water and sterilized oil. Dry eczema is best treated with icthyol, or (where greasy substances are unsuitable) by a powder containing talc, bismuth subnitrate and oxide of zinc; this should be frequently dusted over the affected area. Means must be adopted to prevent the child scratching itself. Baths tend to be harmful; they increase the dermatitis or spread the infection over the skin, and

should be used with circumspection. Whatever the source of eczema may be, the digestion and feeding must be carefully regulated. In breast-fed children the nurse must be dieted; or it may be necessary to change her for another. Digestion in hand-fed babies is promoted by the administration of sodium citrate; the diet may here be changed temporarily to a mixture of whey and barley water, to which a little casein is added. Climatic conditions should be regulated, the high air of mountain districts being especially beneficial. Sea air aggravates an eczema. Internal treatment consists of gentle purgation, castor oil or calomel followed by citrate or bicarbonate of soda. Intestinal antiseptics are of doubtful value; but the lactic ferment is much to be recommended. Thyroid extract is indicated if the thyroid gland seems to be functioning imperfectly; this treatment must not be routine, but it has succeeded in many cases, and should be tried when other means have failed.

Rabies.—Hydrophobia is a disease many centuries old and it is perpetuated among the lower animals, chiefly by the dog and wolf family, which transmit it to other animals—cats, horses, cattle, skunks, bears, deer; it is transmitted to man by the inoculation of virulent saliva through bites. A micro-organism (which, like the the essential causes of scarlet fever, smallpox and the like) has not yet been identified, is the essential cause of rabies; this germ or its toxins invades primarily the nervous system—the cerebrum and medulla—whence the dreadful suffering. The period of incubation is variable, but relatively long, usually between one and two months. The symptoms are referable to excitation and finally to depression of the central nervous system by the germ or its toxins, with ultimate inhibition of function. A general increase of reflex excitability is an early manifestation. The centres for respiration and deglutition are especially severely attacked, spasm or paralysis resulting. General convulsions of central origin are frequent; paralysis of spinal origin may be manifest in the extremities. The mental functions are disturbed in varying degree—from morbid anxiety to delirium and mania. Characteristic pathological changes are confined chiefly to the nervous system. The disease is especially the same in all the many species of animals that are susceptible. Protection is afforded by inoculation with attenuated rabies virus, and to some extent also by antirabic serum; there is no other assured means of saving a patient from the most agonizing of all deaths by this disease. The blood serum of immunized persons and animals possesses specific properties against rabic infection. Once developed, the disease is almost uniformly fatal; no other disease presents these characters of rabies in combination, although one must differentiate from tetanus, lyssophobia (false hydrophobia), hysteria, and poisoning by stramonium and belladonna.

We base this resumé upon Bulletin 65 of the Hygienic Laboratory at Washington. In a case of rabies, then, inexorable logic requires the following procedure: The wound made by the bite is treated antiseptically, as is any other wound, especially an infected one. The dog, if captured alive, is watched from eight to fifteen days; if it develops symptoms strongly suspicious of rabies, it may be killed and the brain examined for the Negri bodies. Upon a positive diagnosis the patient should submit at once to the Pasteur treatment; there is no other way by which a person contracting hydrophobia from the bite of a rabid animal can be saved from the cruelest of deaths. It were fatuous to deny the efficacy of the Pasteur treatment. The open mind has but to compare the pre-Pasteurean rabies mortality with that obtaining in the present day. Tardien and Bouley collected 855 cases in France of whom 399 or 46.6 per cent. died. This was before Pasteur. In 1908 Kassauli in India records 1398 patients subjected to the Pasteur treatment, with five deaths—a mortality of 0.36 per cent.; of 108 persons bitten by supposedly rabid dogs not thus treated 44 died. In India again, of 154 persons bitten by supposedly rabid jackals, and who did not undergo the Pasteur treatment, 48 died. 26,000 cases thus treated in Paris from 1886 to 1901, have given a hydrophobia death rate of less than one per cent.; and a like proportion has obtained in New York, as also in other cities. *Semana Medica* (June 23, 1910) reports from Buenos Ayres that among 10,000 persons bitten by supposedly rabid animals, and who have undergone the Pasteur inoculations there have been 73 deaths, that is 0.67 per cent. The very rare failures have been by reason that the treatment is not promptly administered; its beneficent effects are rendered possible only by the fact that the average incubation of rabies is relatively long. This treatment should be initiated at least in the first fortnight after the bite.

The only way to prevent hydrophobia—than which there is no more appalling disease—is to muzzle dogs or to have them in leash so that they will bite neither other animals nor human beings. All who do not suffer such zoophilia as is likely to provoke anorexia in others, will agree that every dog worth the prize of a muzzle or a leash should be muzzled or leashed; the rest should be destroyed. London, Berlin, Paris—these cities have long proved that rabies can be eradicated from municipal experience by ordinances to this end. For example, in November last it was reported from Paris that cases of hydrophobia are more frequent in its suburbs, where civic ordinances are lax; in six years Paris has had only 211 cases; its suburbs have had 249. It is at the Pasteur Institute especially that the progress of hydrophobia prophylaxis can be estimated. From 1904-9 the number of persons bitten in the Department of the Seine numbered 7,576, of whom 307 were bitten by animals known to be mad (183 in the suburbs and 124 in Paris). The number bitten by rabid animals was 87 in 1904 and 90 in 1905; it has progressively decreased until it became 6 in 1909. Out of the 1069 people cared for since 1904, there has been but one fatal case (which occurred in 1904). This was the last victim of hydrophobia in the region of Paris. Within six years only two cases of rabies have been found in more than 68,000 stray dogs at the Fourière—the establishment where abandoned dogs are received; previously there was an average of 26 a year. Human hydrophobia, which caused 22 deaths in 1885 and 12 in 1901, has caused none in five years. This progressive disappearance of rabies in Paris is rightly ascribed to administrative measures. When the capture of stray dogs is carried on methodically and without let-up, hydrophobia diminishes and seems practically extinguished, when the pursuit of the civis mongrel becomes

relaxed rabies is resumed and the number of its victims increases. Thus it is considered necessary to capture annually from twelve to fourteen thousand stray dogs in Paris to the end that hydrophobia may be exterminated.

Leprosy.—Mr. John Jackson, a Fellow of the Royal Geographical Society of Great Britain, brought to the recent Missionary Exposition at Boston an exhibit of the recent developments of medical treatment of lepers in India, China and other Eastern countries. Since the discovery of the B. lepra by Hansen of Norway thirty years ago it has been vainly sought to make cultures of the germ. However, the workers at the United States Government Research Station at Malakai, Hawaii, have succeeded in developing the bacillus of leprosy to the third generation; this clears the way for a further stage of experiment, namely, the actual search for a curative serum. But as it required thirty years to develop the cultures, it would seem that the development of a remedial serum may cover a proportionately extended experimental period. The ground for encouragement that this process may be hastened lies (so Mr. Jackson believes) in that medical research is becoming well-endowed, and has brought into its field a capable and numerous body of investigators.

Paroxysmal Pulmonary Edema is distinguished by Stengel (Am. Jour. Med. Soc., Jan., 1911) from the acute edema associated with other pulmonary lesions, from acute inflammatory edema and from the acute edema accompanying rapid cardiac dilation. The clinical features of paroxysmal pulmonary edema are its sudden and intense onset with but slight provocation, with expectoration of quantities of frothy blood-stained serum, and the repetition of such attacks without any intercurrent complications. The condition is probably due to a temporary pulmonary engorgement, owing to a sudden disproportionate working between the left and right ventricles, together with an increased vascular permeability. In the treatment the effect of a hypodermic of morphine is so striking as to render any other therapeusis unnecessary.

Chloroform also controls the attacks; but it cannot be recommended as a routine measure because of its possible dangers in cardiac disease. Nitroglycerin should be useful upon theoretical grounds; but in practice both it and the nitrites fail entirely, possibly because the condition occurs in cases of persistent high pressure and arterio-sclerosis, in which the vaso-motor mechanism has been exhausted to the point when vaso-dilation has ceased to be available. Venesection is also appropriate; but compared to a hypodermic of morphine it is not more prompt or satisfactory. After the first stage of the attack has been controlled by morphine (with atrophine) injections of strychnine, digitalin and nitroglycerine will revive the power of the left ventricle, and may promote vaso-dilation; sal volatile or brandy may be given by the mouth if the patient can swallow. In cases under the constant care of a nurse sal volatile should be given immediately an attack threatens, followed by morphine (gr. ¼) and atrophine sulphate (gr. 1/250) as soon as the first definite symptoms appear; this injection may be repeated in fifteen minutes.

Plants in the Sick Room.—R. H. M. Dawbarn, in his series of "Short Talks with My Students" (Medical Record), explains the unwisdom of keeping flowers or plants in a sick room at night. Flowers possess three prominent functions in so far as they affect the air about them. First there is transpiration; they give up moisture taken from the soil, wherefore the air becomes humid if many (especially growing) plants are kept in the room. Second there is respiration; plants here act much as do human beings, using up oxygen and throwing off carbonic acid. Third there is photosynthesis, the name given to the action of sunlight upon the stems, leaves and all green parts chiefly; it is the reverse of the result of respiratory activity, as just stated. So long as there is daylight carbon dioxide is taken in and oxygen given off by photosynthesis. Consequently until nightfall functions two and three about balance one another, leaving neither good nor bad results. But during the entire night functions one and two continue their activity, whilst function three is suspended. Function one is not objectionable; but two, without three to balance it, acts (in principle but not in amount) until the return of daylight, just like an additional person breathing in the room, thus leaving a little less oxygen for the use of the invalid. The standing order should therefore be to remove all plants or flowers at night; it is based upon the sound facts of plant psychology.

Deafness and Tobacco.—Dr. Ferrant of Lyons (states the Lancet) has revealed a new lesion to be put to the account of tobacco—deafness. The use of the weed is dangerous in this regard only when there is a predisposition, as in those slightly deaf in one ear without being aware of it. This by no means infrequent infirmity is only discovered by chance, as in using the telephone; just as imperfect sight of the right eye is perhaps revealed only on trying to take aim with a gun. The predisposition of these half-deaf cases is often hereditary or caused by frequent renewals of inflammation of the nasal or pharyngeal mucosa. Thus it is that in winter chiefly, smoking even in moderation affects the hearing; Ferrant has observed this phenomenon not only in smokers but also in women—for example, the wife of a barkeeper, living in an atmosphere vitiated by the smoke of tobacco generated by the customers. Tobacco chewers and snuff takers are exposed to the same risks as smokers. The affection may become very marked and even incurable, persisting despite the disuse of the weed; it is probably caused by the well-known effect of nicotine on the vaso-motor system, which produces hypertensive phenomena that are not compensated in the tympanic cavity. When we add the well-known injurious effects of nicotine on keenness of sight, on the memory and on the production of arteriosclerosis, we might be astonished at the large number of men who are heavy smokers were it not already proved that the soundest reasoning is powerless against the force of habit and the tyranny of toxins.

The Dresden Hygienic Exposition opened early in May last. Among the countries participating France, England, Spain, Austria-Hungary, Holland, Switzerland, Russia, Brazil, Japan and China have undertaken to show what has been done for the preservation of the health of its subjects. The German sections have

arranged their displays with proverbial Teutonic thoroughness. In a special laboratory experts have been at work for several years preparing the diverse objects to be shown, the rule being that while all exhibits must conform to the highest and latest scientific standards, they must at the same time be so perspicuous that the average visitor can understand everything. Perhaps the most popular of the hundred and more buildings is that upon which the Exhibition's manager, Kommerzienrat Lingner, especially prides himself—a physiological museum in which the structure of the human body in its minutest microscopic details is revealed to the eye. One of the objects in this discussion is a huge glass vessel, filled with 730 litres of a red fluid, representing the amount of blood which the heart has to pump through the body every half-hour; and this is not intended as a curiosity, but as a warning to visitors not to weaken so busy an organ as the heart by excessive indulgence in alcohol and tobacco. Our tourist colleagues should certainly not side-step Dresden the coming summer.

Rodents make up one third of all the warm-blooded animals which inhabit the earth. If rats and their confreres were to appear in the open (instead of living as they generally do, in foulness and darkness) they would change the aspect of civilized cities and countries. But as their activities are not apparent the mischief they do and the damage they cause is little appreciated. Mr. H. C. Evert, of Pittsburg, Pa., in his work as a patent attorney indicates that it would be worth at least a million dollars to the man who would discover some agency more effective than those now known to exterminate rats; and he suggests that this problem is now narrowed to the use of electrical appliances. The business of exterminating vermin is well capitalized for the sake of Government and municipal contracts and the insuring of great warehouses from depredation. Such an electrical apparatus would be most welcome, as would, at the first shock, kill the rat that ventures within the charged zone, the rodent leaping backward out of the region of voltage into a receptacle removed from the sight of his tribe. Electricity gives no warning scent. All the rat tribe have runways upon which the electrical traps might be set. The Department of Agriculture at Washington estimates the damage of each rat to the farmer at half a dollar a year; the damage is ten times this to hotel managers and restaurant proprietors. The city of Washington loses $400,000 yearly, Baltimore $700,000, by rodent invasion. Rats gnaw the insulation off electric wires and cause conflagration in cotton and woolen mills; they pillage greenhouses; they destroy millions of eggs handled by commission merchants; they increase by what they feed upon. One pair of rats would in five years (if there were food enough for them all) produce a family of 940,000,000.

And yet such dreadful economic losses are insignificant by comparison with the human suffering and death that has come about through the disease-conveying rat. Consider only the Black Death; the rat has from time immemorial spread this infection, having carried it to at least fifty-two countries.

Modern Preventive Medicine is a babe in the family of sciences. The veriest schoolboy knows today more about public hygiene than the learned doctors who gathered twenty-five years ago at the first Hygienic Exposition in Germany. The great International Hygiene Exposition now holding in Dresden and to continue through October shows a manifold development of the means of protecting the public from its microscopic enemies in air, soil and water, in food and clothing, and in the conditions of traffic, trades, business and travel. Germany is the home of preventive medicine, as Koch was its father. If the death rate were controlled among us as it is controlled in Prussia a million more persons would yearly still be breathing the living air in these United States.

Infection Safeguards in Boston.—Four nurses were recently appointed by the Boston Board of Health, to take charge of all cases of infectious disease occurring in that city. When a contagious disease is reported to the Board of Health, whether in the home of the wealthy or in the slums, the duty of the nurse concerned is to take immediate charge of the infected house. If the patient does not wish to be removed to a hospital the nurse sees that a complete quarantine is established. The doors are placarded and every person in the house is taught how to safeguard against the disease. If these instructions are not carried out the Board of Health (it is reported) orders the patient to a hospital. As a result, those diseases which were a menace to whole neighborhoods, are now confined to one or two households; and the percentage of contagious diseases is markedly falling off. The nurses have some difficulty in convincing the foreign element of the slums of the necessity of quarantine, but with tact and patience the difficulties are at length overcome. Upon entering a house the nurse always changes her gown, and wraps the one removed in a rubber sheet. She uses sprays and disinfectants liberally, and takes every precaution to protect herself, as well as the people in the house, from the disease.

Women As Doctors.—The idea, points out a Paris contemporary, is not a product of modern "feminism." It seems that in the eighteenth century there was a lady student at Florence. She came from Malta under the patronage of the Knights of Malta; the administrator of the Majeur Hospital was somewhat embarrassed with his new pupil, but he found a means out of the difficulty. The chief of the Order of the Knights of Malta, in introducing this lady to the professors of the Florence School of Medicine, wrote: "It seems to me that the matter could be arranged without any great inconvenience if the young lady were boarded during the period she was studying at your medical school with the nuns in a neighboring convent, for which we would pay five crowns a week. In regard to her instruction she should assist in operations at the women's hospital, notably those performed by Prof. Maunoni. He should also give her some private lessons at the convent; for it appears to me that she should not be present in classes with young men." The hospital council, being well-disposed to the Knights, adopted the suggestion. More than a century elapsed before another lady was enrolled in the schools of Florence; there then appeared a Russian, and she was admitted to the schools of Santa Maria Nuova.

By "The Return to Nature" Dance have the Santa Clara and San Ildefonso Indian tribes of New Mexico been celebrating the success of tribal temperance

crusades. This dance has not for many years been held, apparently because there was no good reason; but the Indians considered the banishment of the fire-water demon from their pueblos a fit occasion for its revival with all the earlier display of weird costumes and decorations. A year ago the reform movement began, led by three chiefs who foresaw the degradation to which the excessive indulgence in "bootleg" liquor would bring their tribes. They succeeded in having passed by the council a law condemning all drinkers to work on irrigation ditches—so many feet of irrigating water for so many drinks of firewater. There has been a fine irrigation ditch completed; but at the time of the celebration there was not a penitent on the works. The crusade is said never to have been equalled among any class of people who are accused of a hereditary weakness for stimulants. Reform by the irrigation ditch may be a red man's way; but it seems to be effective.

Insanity and Crime.—In 1910 the State Bar Association proposed a fundamental change in the law relating to insanity as a defense in criminal cases; it recommended that "insanity or other mental deficiency shall no longer be a defense against a charge of crime. But, declared a Committee of the Society of Medical Jurisprudence, if this course were adopted it would be necessary to hold either that the insane must form a criminal intent or that the essential ingredient to crime must be wiped out. Herein, it would seem, the Society's committee places itself upon the solid ground of a vital principle. The first of the alternatives here mentioned is clearly inadmissible; and to fall back upon the second is to assert that the law is prepared to inflict punishment where there is no guilt. The temptation is undeniably great to do something radical to rid our civilization of the abuses of the insanity plea; yet sober reflection on the relative values of things (observes the *Evening Post*) must compel the conviction that to abolish altogether the insanity plea would do an injury incomparably more serious than any to be feared from these abuses. These lie, after all, on the surface, and can be got rid of, or reduced to insignificance by energetic improvements in practice; while to deny the vital principle that punishment is conditioned on guilt would be to weaken what lies in the very heart of the criminal law and is an essential factor in its moral efficacy.

Mistakes in Pharmacy.—A temperate word of caution is given in the *Bulletin of the Indiana State Board of Health* regarding the responsibility of the pharmacist when filling prescriptions. During several years past many instances of such mistakes have been noted. Samples of well-known tinctures sold the Indiana State Health Board inspectors and labeled by the clerk (presumably with special care) have been entirely different from the prescription. A sample labeled tincture of iodine proved to be tincture of iron; another labeled tincture of iron proved to be tincture of iodine; a sample sold as citric acid proved to be oxalic acid; another purchased as borax was in fact potassium chlorate; another labeled potassium cyanide was in fact potassium ferro cyanide; a sample sent to the laboratory as gin proved to be methyl alcohol; morphine tablets were upon analysis found to contain strychnine; a sample of plaster paris was found to be a mixture of calcium sulphate, carbonate and oxide; two samples of epsom salts proved to be potassium nitrate; and tablets sold as cathartic proved to be morphine tablets. Some of these errors were innocent and not dangerous; others were deadly, two deaths having resulted from the errors of the clerks. In view of the possibility of the substitution of drugs of similar appearance it is incumbent upon the druggist's profession to demand in its clerks still greater care in the handling of all drug supplies. A greater margin of safety might be provided by requiring that all preparations known to be poisonous in the normal dose should be kept in a special closet under lock and key, and that the registered pharmacist in charge of the store should alone be entrusted with the key.

The Normal-Ehe.—To presume or to propagate the true North Germanic type of race is the aim of Prof. O. Hauser, who, in the *Politisch Anthropologische Revue*, takes the view that one live German is better than a dozen paleolithic skeletons, and appeals for a national subscription to assist the typical north Germanic breed of race by promoting the "Normal-Ehe," that is, the mating of couples who satisfactorily pass the following tests: The man should not be above 30, the woman 28; both must have a certificated clean bill of health. The man's height should not be less than 5 feet 7 inches; the woman's not less than 5 feet 6 inches. Their hair should be blonde to auburn; eyes pure blue without brown shading; complexion fair to ruddy without being "berby;" nose straight and narrow; chin, square and powerful, and skull well developed at the back. Both must be of German descent; they must bear a Germanic name and speak the language of the Fatherland. But they may reside in a country such as the United States, where Germans are free to develop themselves without hindrance. To enable successful candidates to marry a wedding gift of $125 is proposed, with further grants for every child born to the union.

The Ways of Femininity.—Why, asks the *Daily Mirror* from across the pond, why can apparently fragile women wear pneumonia-inviting blouses in the arctic springs of the British Isles; why can they walk about in the thinnest of shoes and transparent stockings when the temperature is below the freezing point; why can they do these things and wear an evening costume which would be fatal to the majority of men, and yet suffer no harm? To solve these momentous questions "an experienced doctor who had studied the subject" was appealed to. He certainly had need to be experienced in these premises. This colleague (name not divulged) knew that women's skin is more tender than men's, and their constitutions generally less able to stand cold and wet. He then discovered that women have a special layer of fat all over their bodies, thicker than man's, and acquired when human beings dwelt in caves and huts; in those days men were able to keep themselves warm by hunting and fighting; the women had to stay at home in the cave to look after the baby and cook their husbands' dinner whenever they might bring it in. Caves or huts must have been chilly abodes in keen weather, with an east wind blowing; and women who had no hunting to warm their blood and enable them to resist cold, suffered accordingly. Wherefore mother nature gradually built up on women a special layer of pro-

tective fat. That took a few thousand years; but bit by bit the work was completed, with the result that women can now play what seem to men foolhardy tricks, with comparative immunity. Thus our colleague who discretely does not divulge his name; the explanation is perhaps as good as any.

The Saving of 13,000 Lives.—Dr. Wm. N. Guilfoy, of the Health Department, has reported that if the average metropolitan death rate during the decade from 1900 to 1909 inclusive had continued during 1910, just 13,000 more people would have died. These lives were saved by increased sanitary control over disease. Tuberculosis claimed 1,840 fewer victims, pneumonia 2,203, Bright's disease and nephritis 1,317. Six thousand lives of children under five years were saved; 6,000 of persons between 5 and 65; less than 500 above 65: It is thus to be noted that preventive and remedial measures have not yet made marked progress in reducing the death rate among those advanced in years. Despite the above general decrease in the death rate (remarkable by reason that the birth rate—26.55 per 1000—was the highest in its history) there were actual increases in deaths from cancer, structural heart diseases and "hob-nail" liver. Appendicitic, which rarely afflicts the aged, also showed an increase in deaths; this was probably because more cases formerly classed under acute indigestion, were placed in the appendicitis column. New York City, despite its congested areas, is becoming quite as helpful to live in as the country—and in most of its districts more healthful.

The Cardiac Sound and Impulse.—T. Fisher (Lancet, Jan. 7, 1911) examined a number of children in whom the diagnosis of cardiac disease had been found; in several of these a presystatic murmur was thought to indicate mitral stenosis. But Fisher concludes these were not cases of "presystalic murmur" but really of a third heart sound. This may be mistaken for a mitral stenosis. A diastolic impulse, which can be palpated, is also present when this third heart sound is well-marked; the cardiagram shows such an impulse clearly. This sound may arise either in the left or right ventricle; when it is heard best at the apex it probably arises in the left ventricle; when more widely heard it may arise in both ventricles or in the right only; the diastolic sound may be best heard over the right ventricle; sometimes it is heard only at the moment that expiration ceases and inspiration begins.

The "Swab" Left in the Abdomen.—Our surgical colleagues in France have been greatly perturbed by a verdict which mulcted a distinguished surgeon in $1,000 damages for alleged negligence in an operation. It was admitted that the surgeon saved the patient's life; but unfortunately he left a "swab" in the abdominal cavity. In France the civil code renders a person liable for involuntary damage caused not only by his act, but also by his negligence or imprudence. According to the letter of the law a fireman, for example, who in rescuing an unconscious woman from a burning house, sprained her shoulder, would be liable to pay damages. Until the condemnation of the surgeon in this case the members of our profession in France had assumed that they were liable only in the event of culpable negligence which resulted in genuine damage. Abdominal operations have almost invariably been done under conditions which rendered such an act of forgetfulness not culpable. If swabs were not used the proportion of deaths in laparotomy cases would be inormously increased; but the courts would not be compelled to intervene. Surgeons are willing to accept responsibility and to submit to condemnation in cases in which culpable negligence resulting in serious injury had been proved; but the true safeguard of the patient lies not in the law, but in the science and conscientiousness of the surgeon.

Alcohol Without Ferment is said to have been made in London by the Chemist Overbeck, who has been conducting a series of experiments for the purpose of finding some way by which beer could be dealcoholized without depriving it of its flavor, or its aeration and keeping qualities. He has frozen beer after it had been dealcoholized and then had driven carbonic acid gas through it at a temperature of 120 degrees—and has produced alcohol. Overbeck considers this must lead to an enormous development in our ideas of alcohol fermentation.

Influenza and Cats.—The recent London epidemic of this disease seems also to have attacked cats; the *Lancet* admits, however, a possibility that the disease from which felines were suffering coincidently with humans might be distemper. Whatever the disease, it prevailed during March last in several parts of England in a form fatal to cats. "It often occurs in such a virulent form as to clear out a whole cattery; the disease is spread very rapidly by the habits cats acquire of associating together, especially at night time." The *Lancet* has run counter to the proverbial belief that a cat has nine lives, in stating that it is difficult to treat the disease in cats, "owing to their obstinacy and lack of vitality."

The Toad in Therapeutics.—The tropical toad is reported to have been found by Dr. John Abel of Johns Hopkins, and Dr. D. Macht, to yield bufogin, a powerful heart stimulant. "Its constrictive action and its powerful stimulative action on the cardio-inhibitory centre compel us to class this drug with the most effective of the digitalis series." The fluid is obtained from the gland behind the ear of the bufo agua, the largest tropical toads found in South America. These scientists experimented on bullfrogs from Montego Bay, Jamaica; they "milked" as many as sixty toads at a time, using curved forceps to which was attached a bowl to catch the venom from which the bufogin is easily isolated. The South American aborigines used this venom to poison their arrow tips. So far the tests or experiments have been confined to animals, with excellent results for science. From time immemorial the toad has been regarded as a venomous creature; the Chinese have long used "senso"—a preparation derived from toad skin. Senso is said to be from fifty to one hundred times as powerful as digitalis.

Sir James Crichton Browne, that most versatile of physicians, has recently turned his attention to cooking. The Universal Cooking and Food Association, in which he is interested, celebrated its 25th anniversary by a dinner, which was described as a "harmonic progression from light dishes of delicate flavor to those more substantial and highly flavored; it rose and fell gently as a summer breeze, the crescendo

being followed by a decrescendo." The menu (which through lack of space we cannot reproduce) certainly bears out this poetic description of what a good dinner should be. In a post-prandial contribution Sir James told his fellow-diners how a delicate morsel, perfectly served, of delicious flavor and good aroma, will send to the stomach before it is swallowed a telephone message to say that it is coming. Such a morsel not only sets the mouth watering by stimulating the salivary glands, but it also induces a flow of the gastric juices by acting on the gastric glands, which latter come into play before any portion is swallowed. Immediately indeed, as it gets the telephone message that something good is coming, the stomach prepares itself most hospitably. A tasteless or insipid dish is not thus graciously received into the stomach. Easy assimilation depends upon good flavor and aroma; good cooking not only tickles the palate but contributes also to the great work of nutrition.

Plague has been raging so long in India that it fails now to attract much public attention; with the recent spring, however, it has taken a new lease of life —or rather of the destruction of human life. The United Provinces of Agoa and Oudh have experienced the worst fury of the pestilence. With the beginning of this year there were 20,000 plague victims every week in India, and half of these perished in Agoa and Oudh. March saw 131,000 plague deaths. The India epidemic is far in excess of the mortality in the Chinese epidemic which ended practically in April.

Greater Love Hath no Man.—Aware that they were taking their lives in their hands five workingmen of Laurel Hill, Long Island, rushed to the aid of Joseph Geyer, one of their fellows, who had been suffocated by fumes in a sulphur tank. Geyer died; as did also Frederick Slain, one of the rescuing party. The remaining four were long in a critical condition and may not again enjoy the health they had before the tragedy. Dr. Wm. Mac Tiernan, ambulance surgeon of St. John's Hospital, whilst attending to these patients fell unconscious and was in great jeopardy of his life. Dr. Terence Gallagher, ambulance surgeon, was also seriously affected.

Quality, Not Quantity.—Those whose hatbands are not large may find comfort in the report of Dr. B. G. Milder, of Ithaca, N. Y., upon the cranium of the late Daniel Lyon, whose brain weighed but twenty-four ounces — one-half the average weight for a white man. Mr. Lyon had, while living, "nothing defective or peculiar about him, either mentally or physically. His brain, exceeding that of certain apes by only six ounces, served him quite as well as the brains of his fellows served them—better than some."

Sleep. — K. Brodmann showed in Zentralblatt f. Physiol. Bd. XVI, p. 310, that the amount of blood is increased in the cerebrum during quiet sleep.

The nature of sleep is apparently one of vegetation, and being awake is the state of periodic function of an organ in which or to which the faculty of attention integrates. That blood pressure in the brain is heightened and the amount of blood decreased is reasonable to believe if there is any positive force exerting, although active function would require more blood. But the use of blood for repair, in increase, comes in sleep, when, as shown, the amount rises. Speculation upon the nature of thinking is profitable and ought to lead to some discovery, for only natural forces are probably involved.

Diseases Earliest Described by Americans.—

1. *Dermatitis Herpetiformis*: This receives the European term, Morbus Duhringi. An authoritative article may be consulted in Louis A. Duhring's Cutaneous Medicine, 1898 (now out of print, the plates having been destroyed in a fire, after one edition was partly issued). Duhring insists upon the designation herpetiformis, and objects to the use of the word multiformis, as he believes the eruption assumes a form governed by nerve distribution.

2. *Neurasthenia*: An ailment made distinct in the writings of Beard. Neurasthenia is losing some of the elementary significance which he gave it. In the studies of S. Weir Mitchell and others the primary character of one group so characterized is separated by the secondary or symptomatic neurasthenias. Dana carefully distinguishes neurasthenia, in and of itself, from the neurasthenic syndromes of paresis, and toxic conditions.

3. *Wet Brain* (alcoholic cerebral edema): Charles Loomis Dana reported a series of such cases. A cerebrospinal fluid cell-count is useful in diagnosis. A Wasserman may indicate syphilis, which of itself is not causative.

4. *Phrenasthenia* (psychasthenia): Under the former head early cases were first described by Dana. Psychasthenia has recently assumed an important aspect. The idiopathic or primary instances of phrenasthenia constitute a pathologic entity of great importance.

5. *Heat Exhaustion* (opposed to insolation, or sun-stroke): Horatio C. Wood described these cases and in 1876 treated a great series of them. The surface of the body becomes cool and moist; prostration is extreme.

6. *Malaria*: John K. Mitchell in 1849 first scientifically distinguished this ailment, although Hippocrates in the fifth century B. C. had written of the fever contracted from swamps or marshes.

7. *Athetosis*: W. A. Hammond first described these movements in 1871.

8. *Post-Paralytic Chorea*: S. Weir Mitchell in 1874 gave us the earliest recognition of this condition.

9. *Adiposis Dolorosa*: F. X. Dercum described this condition first.

10. *Bell's Mania*: Bell, of the McLean asylum, first recognized this ailment.

1. *Eye-Strain*: George M. Gould deserves the credit for separating this syndrome so clearly and emphatically as to constitute one single and effective entity.

12. *Thermic Fever of the South*: John Guitéras described this, and is quoted by Tyson as giving his belief in its infectious nature, occurring in different members of one family.

13. *Starvation Fever*, of Da Costa.

14. *A-typical Continued Fever of Nashville*: Cain, according to James Tyson, has described this.

15. *Simple Continued Fever*: J. M. Da Costa, 1896, and Baumgarten (St. Louis, Mo.) in 1893.

16. *"The Slows"*: A Western ailment called Puking fever, according to Tyson.

Of these sixteen morbid processes it is interesting how many are the result of the work of neurologists, viz.: Dana, S. Weir Mitchell, F. X. Dercum, H. C. Wood and Beard.

MISCELLANY

Preparing for the Worst.—An Iowa physician is reported to have left instructions in his will that his body should be wrapped in asbestos before burial.

Standard Bread, now popular in England, differs both in color and in consistency from the ordinary white bread; the former contains the germ and inner cuticle of the wheat berry, and the flour of which it is composed is pounded by stone instead of steam rollers.

Unconscious Forty-two Days.—A four year old child, the patient of Dr. G. B. Brown, of Yonkers, regained the possession of all her faculties after lying unconscious forty-two days. The child first suffered an attack of whooping cough; and later both pneumonia and spinal meningitis developed.

A Medical Samaritan.—At the Hotel Dieu Hospital in Montreal Staff Surgeon Charles Saint Pierre recently gave up a pint of his own blood to save a patient whose death was feared, and whose relatives failed to appear after promising to submit to the transfusion operation. The physician-Samaritan declared afterward he felt none the worst after the venesection.

Infantile Paralysis, observed Dr. Simon Flexner in a recent address before the National Academy of Sciences, must be controlled by prevention, since no specific remedy or cure for it is known. He commended the determined efforts made by many States to deal with the epidemic through prevention, by requiring notification and quarantine. 20,000 cases of infantile paralysis have appeared since the appearance of this disease in its epidemic form in these United States.

A New Sign of Tubal Pregnancy has been found by W. W. Golden (W. Virg. Med. Jour., May, 1911): This is a more or less striking paleness of the cervix; its absence does not exclude tubal pregnancy, but its presence (when not due to obvious other causes) is almost pathognomonic. However, it is present only in those cases of tubal gestation in which the uterus bleeds; and then only when this bleeding is active. This sign is therefore chiefly valuable in the differential diagnosis from threatened or incomplete uterine abortion.

The Aviator's Sensations.—Drs. Conchet and Moulnier of Bordeaux have studied the physical sensations of flying and conclude that the airman who shoots downward from a great height feels his face become hot and inflamed, the blood rushing to his head, and a desire for sleep taking possession of him. So long as his aeroplane is under control he can descend safely from level to level—first a spiral drop and then, with motor working, a brief flight to relieve cerebral congestion. Death in a machine that drops straight down is probably painless.

Boxing is reported from the Tight Little Island to have become popular among athletic English women, who are often spectators at boxing contests and themselves take lessons in the art. Some of these pupils are well known in English society; few fear black eyes and cut lips. It is naively reported that these lady boxers are not all young athletic girls, that most of them are on the contrary married women between 30 and forty; "nothing seems to please these ladies more than a short bout with their husbands. Possibly the Satirist Gilbert had this state of things in mind when he wrote of the felicity of unbounded domesticity."

A Coroner's Jury Verdict.—In the good old Western "gun play" days a coroner's jury rendered a verdict to the effect that the deceased had committed suicide "through not pulling his gun quick enough." In Aiken, S. A., a somewhat similar verdict was rendered as follows: "We, the jury, find that the deceased, Joe Miller, came to his death by gunshot wounds from the hands of H. W. McMillan, and that he was justifiable in doing so." It was probably meant that McMillan was justifiable; the statements as it stands, however, would appear at first thought to exonerate Miller from blame or criticism for getting in front of McMillan's gun.

Saccharine is, because of its intense sweetness and relative cheapness, now widely used as a substitute for sugar in such products as jellies, jams, soft drinks and the like. The referee board of food experts of the government finds, as the result of a long series of experiments, that this practice is dangerous to the consumer. Persons taking saccharine foods suffer from various digestive disturbances of a more or less serious character; the nutritive value of the foods containing saccharine is moreover lowered. The government has therefore issued an order prohibiting the use of saccharine in any food preparation after July 1, 1911—an important and far reaching act in that it would indicate the determination of government with regard to other food poisons.

Clean Teeth and Brains.—Five minutes of the time usually given to study will henceforth be devoted to scrubbing the teeth by the 60,000 school children of Cleveland, Ohio. This course was decided upon after dental experiments made with a group of school children: In the presence of representatives of the federal government and a number of physicians, dentists and school officilas, the 27 children of the group showed that their powers of perception, keenness of observation and general quickness of mind were better developed than those of their school mates. The great improvement shown in their studies after they had been submitted to a dental treatment has resulted in the tooth-scrubbing order. 'Tis indeed a wonderful age—this in which we are privileged to live.

The Somnarium is the name of a new fashionable rest cure establishment in France; the only duty enforced on patients there is to sleep. On entering they leave the outside world behind; the old clothing is discarded for entirely new wear. The patients are sufferers from nervous depression, harmless manias, loss of will power and of memory, melancholia, worry and alcoholism. Their names also are left behind, in the outside world, and they assume the names of the rooms they occupy. These rooms are called after famous physicians; the inmates of the Charcot room, for example, are named M. or Mme. Charcot. All the rooms for patients in acute stages are painted indigo blue, a color considered to be soothing and comforting to neurasthenics and dipsomaniacs.

When convalescence is reached patients are removed to apartments painted green, this color being still and soothing and a tonic as well. As for the rest the only imperative order is sleep; if insomnia persists somniferous scents are wafted about the establishment, such as of cardamom, heubane and myrrh.

SIMILIA SIMILIBUS CURANTUR.*

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IF this paper trespasses upon the modern teachings of homeopathy, such will be incidental and not intentional. Yet, such an event would not be unfortunate, since the more quickly all practitioners of medicine find a common ground upon which they may meet, the better they will be. Everything herein is justified by teachings of such authorities as Ehrlich, Metchnikoff, Wright, Sajous, Adami. However, the maxim chosen as our subject originated with Hahnemann over a hundred years ago, and, although he never approached a realization of its vast significance, occasion must be taken in due course, to give him credit for its origin.

The fact that Nature cures diseases more frequently than do physicians, has been accepted for centuries complacently and with little regard for its significance. But, in the last decade, aggressive and insistent minds have been wrestling from her reluctant grasp Nature's technique of defense, and it only remains, now, for this knowledge to be woven into our system of therapeutics, to give us accurate and definite methods of combatting disease. Adami has stated these principles of defense more clearly than any other writer of my acquaintance, and to his writings this paper is deeply indebted.

All living matter owes function, form and very existence, to its property of adaptation to environment. Races of men with their anatomical and physiological variations, diverse species of animal life, varied forms of plant life, have developed and continue now to exist, solely through this property. The study of adaptation has brought into clear light certain facts which are necessary for an accurate conception of health, disease and therapeutics.

First.—The constituents of the molecules of living cells (called biophores by Adami) having an inherent tendency to vary. However, a more significant fact is, that a change in environment or external influence is necessary to bring about a variation in the molecular arrangement within cells; and, with each change in environment, a particular variation occurs in the cell. Consequently when the environment is under control, a desired variation can be produced.

Second.—When a given environment persists, the variation becomes stable and permanent. The cell is adapted to the new condition, and the environment, which may have been destructive in the beginning, has no more influence. "Adaptation is, in no case, immediate, but requires some little time for development, and this even in the simplest forms of life. . . . Once living matter of the cell becomes modified the modification is apt to persist and to be carried on to later generations." These laws apply just as definitely to a group of organized and specialized cells — that is, to an organism, as they do to isolated cells.

Third.—Following changes in external influences, there is more than a precise adjustment of internal conditions. A cell stimulated continues to react after the stimulus has ceased; cells follow the law of momentum of inertia, and tend to continue in the same condition—whether of rest or activity—after the influence which has brought about that condition has been removed. Owing to this property, a cell subjected to an alien influence, after adjusting and adapting itself, continues the process until the reaction is out of proportion to the stimulus, the tendency of the cell being to prepare itself for more powerful influences of the same character.

Fourth.—"Adaptation is always and essentially an active process, an inevitable process, and is, in no sense the result of chance. It is not a passive adjustment in a favorable direction, but the process of living matter changing and moulding itself to its surroundings, so that changes in those surroundings lead to definite and corresponding alterations in the living matter."

Then, man is an adapted and adaptable animal. If this had not been so, there would be no human race; (1) because men could never have scattered over the earth had they not been adaptable to diverse climates and thermometric changes; (2) plagues would have destroyed them, for the property of adaptation, in its natural working and in its artificial application, alone, has stood between them and annihilation by bacterial diseases. An Eskimo cannot live in the torrid zone, nor a Hottentot in the frigid; yet they sprang from common ancestors with us, who stand midway between them in our adaptation to climate and heat. During centuries, the organs, tissues and cells, by molecular changes have, in the negro, become more and more adapted to the equatorial climate and those of the Arctic dweller to the frigid north, until we have wide variations in the effect of external conditions upon the human organism. So, also, it is that there are as many variations in the physical and mental qualities of men as there are diversities in the external environment, whether this be climatic, thermometric, altitudinal, racial, social, educational or moral. Through adaptation, the human race has been able to multiply in spite of virulent, epidemic and pandemic diseases. This property has prevented the opium vice from wiping the Chinese nation off the map; has permitted South African tribes to increase in the presence of scourges which kill one Caucasian out of every three exposed; goes far to explain why tuberculosis cannot decimate the American whites, and why cholera makes no headway against the teeming millions of India. A race of people scourged by any disease will gradually develop an accustomance to that disease, and,

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*This meritorious and exceedingly timely and interesting article is an annual essay read before the Phœnix, Arizona, Medical Association and sufficiently appreciated by that live and progressive medical periodical of the occident, with its corps of capable editors and contributors, including Lindley, Kress, Bert Ellis, Pottenger, Flinn, Barlow and Cole to give it space in advance of the Alienist and Neurologist, in that live medical magazine of Los Angeles, The Southern Calif. Practitioner, to which we are indebted for copy.

Dr. Warner Watkins has struck a keynote for therapeutic study of rational therapeusis in the light of the advanced cytology and cytotherapy of our present time and the Alienist and Neurologist is not a homeopath in its sectarian sense, but rather in the Hippocratean sense, viz.: that diseases are cured both by similar and contrary therapeutic impress though finally always by contrary effect.

"Similia similibus et contraria contrariis curantur morbi" would probably both be now accepted in the present day light on hematocytology and cytohematotherapy. The alexins phagocytic antibodies were not within the scope of Hahnemann's physiotherapeutic vision when his organon appeared.

thereafter, it will not affect them nearly so profoundly as it does a people to whom it is novel. Also, the grafting of a disease on virgin soil means a widespread and exceedingly fatal infection. An epidemic never "wears itself out." It is worn out, beaten back, eradicated, by Nature's property in living organisms of adaptation to environment, so that influences destructive in the outset, ultimately become neutral or even beneficial. The disappearance of a plague means the survival of a vast aggregation of individuals presenting an adaptation to the presence of the microorganism and toxin of the plague. "Health is a condition in which the organism, or the part, is in complete adaptation to its surroundings," and is a very variable condition as regards the molecular arrangement in the cells. "Disease is a condition in which equilibrium and adequate adaptation are wanting."

The law of adaptation, that "with a particular environment a particular alteration in properties results," holds true from the lowest form of plant life to the highest form of animal. By utilizing this law the specific and characteristic properties of bacteria may be changed; *e. g.*, the typhoid bacillus, which normally does not produce indol, can be made to produce it. Nonpathogenic bacteria can be made virulent; the B. megatherium and the B. mesentericus, forms which can be injected by the million into animals without harm, can be made pathogenic by a process of adaptation. The bovine tubercle bacillus can be—and often is—made pathogenic and virulent to the human cells and tissues by adaptation. The cellular elements of the body are governed by the same law. Acquired immunity is due to this, being simply adaptation to an external influence, the environment, in this case, being infection. The crux of the argument is that "animals adapt themselves to and combat diseases according to very definite laws," the reaction varying as the pathogenic microbe varies in its properties, virulence and activity.

Knowing this law, when we have learned *how* it can be called into operation, our therapeutics will be able to combat, directly, the causes of diseases, instead of, as now, concerning itself almost exclusively with symptoms, or depending on empirical treatment. The phenomena of a small cutaneous infection are typical of all bacterial invasion. Following the entrance of bacteria into the tissues, the cells in that vicinity are bathed in a solution of toxin; the molecules of the cell, unless destroyed, rearrange themselves so as to be indifferent to the toxin; that is, adapted to the new environment. The phagocytic cells, being least specialized, and, therefore, more subject to change, react more profoundly, and not only adapt their structure to the poison, but undergo a powerful intensification of their inherent function—massing themselves about the area of infection (chemotaxis), grappling with the bacteria (phagocytosis), until these invaders are all destroyed—when the infection will subside. In any specific infection, the process is the same, following a definite law. These principles and phenomena we have thoroughly learned by studying immunity. This study is so profoundly influencing our therapeutics of to-day that it has recently called forth a "Principles of Medicine" from the pen of a high authority, based on the theory that in the "autoprotective resources of the body and the laws through which drugs influence them" lies our scientific therapeutics; that these resources are developed through adaptation, that active immunity is adaptation; that, consequently, active immunity is the basis of the therapy of the future.

What will be the place of drugs in a therapy based on such principles as these? A very much more exalted one than that which they now occupy. Empiricism will give way to exactness and, except for drugs given for the sole purpose of temporarily combatting harmful symptoms, they will be given with the definite intention to augment the tendency of cells to first adapt themselves to a toxin environment and then to attack the bacteria.

At this point, due credit must be given the man from whom the title of this paper is borrowed. There were many things in Hahnemann's practice which look crude to us at this distance; there were also, many things in the practices of Galen and Hippocrates which are ridiculous; but the mistakes and accomplishments, alike, of great men, must be judged in the light of their own generations. Hahnemann lacked our knowledge of bacteriology, biology and pathology; he knew nothing of the molecular changes in cells resulting in adaptation. He knew that internal derangments produce external symptoms. He had a profound knowledge of the pharmacology of drugs, as well as their physiological action, so far as external symptoms went. He perceived that there were substances which, in their action upon the human tissues, produced similar or identical symptoms; some were unknown and unacertainable—the exciting causes of diseases; other substances (drugs) were known to him. His conception was that the administration of a drug in small doses would surround the tissues of the body with a particular environment and the changes wrought in becoming adapted to this environment, would cause such tissues to resist, more easily and effectively, the destructive action of any substance producing similar symptoms. For instance, Hahnemann had before his eyes the most prominent symptom of scarlet fever and the well-known erythema of belladonna. Ignorant of everything connected with scarlet fever except its objective symptoms, he conceived that a tissue adapted to the presence of belladonna would be more resistant to the destructive action of anything tending to affect it in the same manner, although more powerfully; that is to scarlet fever poison.

We, now, have climbed to the heights of supposition that the streptococcus is the cause of scarlet fever, so we administer antiseptococcic serum or vaccine, in order to adapt the tissues to the environment to which we conceive the disease will subject them. Hahnemann had to pair off effects in order to find identities; we find them in the culture tube. It is easy for one desiring justice to a great genius to believe that, had Hahnemann been able to learn the actual causes of diseases, he would have carried his proposition much further than the empirical administration of drugs. Without any knowledge of the action of drugs on cells, without knowledge of bacteriology, without knowledge of the definite laws of biology, still he could catch a glimpse of the greatest principle of physiology and suggest its therapeutic application.

This principle, that is, of adaptation, forms the

basis of all the defensive processes of the human organism. Sajous contends that the body has an autoprotective mechanism, a chain of organs, whose functions are (1) to detect the presence of alien substances within the circulating fluids, and (2) to initiate the process of defense. This process consists (1) of changes in the circulation, respiration and metabolism, looking to the chemical and mechanical elimination of poisons; (2) through the nervous system, to warn the tissues and cells of the presence of danger, and cause them to enter a molecular condition of resistance even before the toxin has reached their vicinity. His contention would be reasonable even without proof. Why should we expect, in a highly differentiated organism like the human body, that each cell must be bathed in toxin before it becomes aware of the presence of that toxin within the body? We do not expect a man swimming in a lake of albumen or other food matter to absorb it through his skin, simply because a moneron takes its nourishment in at the periphery. If the human organism, in its long process of development, has had to evolve a mouth, teeth, stomach, intestines and accessory organs of digestion and absorption, and been forced to provide an organ for every function, is it possible that we have never gotten beyond the stage of monocellular organisms in detecting and destroying poisonous substances within the tissues? Nothing is more necessary than a system of organs whose sole function is to detect the presence of toxins, and to bring about such chemical changes in the fluids of the body, and such physical and biological changes in organs and tissues, as will augment those cellular activities which constitute the aggressive resistance of the body to disease. There is such a group of organs, acting through the nervous system, as amplified by Sajous. It consists of the pituitary gland, the thyroid, and the adrenals. Drugs which lend artificial aid to this system of autoprotection, by direct action upon these glands, or indirect action upon the peripheral nerves, are bringing about adaptation, and consequently, follow the law of similars.

We shall be compelled to interpret the actions of many drugs in this new light. For instance, we all have been taught that digitalis acts directly on the heart muscle, basing the idea on experiments upon the exposed hearts of animals. The weakest solution which will so act on the exposed heart is one in 50,000. Yet, we know that the hypodermic injection of 1-100 grain of digitalin has a pronounced effect on the heart beat; this dose would form with the circulating blood a solution of about one in five million! We need to look further, since this solution certainly acts upon some tissue much more sensitive to its presence than is the heart muscle. We think we know the action of quinine. Five grains of quinine, often repeated, will kill the malarial parasites in the blood. But a solution of one in 10,000 of quinine is not very powerfully germicidal. In what way, then, does quinine cause the plasmodii to be destroyed? The only statement concerning the action of quinine on blood cells, is that it causes the white cells to remain within the vessels, instead of wandering outside; this is very significant because the plasmodii are in the blood stream, and good soldiers will stay where the enemy are. If this were the only effect of quinine upon the white cells—keeping them on the field of battle—the drug would be as effective against spirochetæ of syphilis as against the plasmodii of malaria. But the administration of quinine causes the phagocytes to attack the plasmodii alone, with more avidity, and to destroy them when they could not do this before. Then, upon the well established facts of adaptation, we can say that the absorption of quinine by the phagocytes produces similar molecular changes in them as the changes produced by the ingestion of the parasites or contact with their toxins. The actions of the two substances on the cell are similar and curing malaria with quinine is on the principle of similia similibus. One-fourth grain protoiodide of mercury, administered four times a day, will kill the spirochetæ. One day's dose will make a solution of only one in 50,000 with the blood. If it does not make a germicidal solution of the blood, what is its action? It is patent that the germs are gotten rid of, and that by the phagocytes. Materia medica enlightens us with the information that mercury has some action, not yet explained, on the blood cells. Whatever that action is, it gives to these cells fighting properties never before possessed by them against the spirochetæ, identical properties the cells would acquire if they should become adapted to the germ itself. If mercury produces adaptation and aggressiveness to the spirochetæ, the actions of the two—germ and drug—upon the cell, are similar, and curing syphilis with mercury justifies the law of similars.

The injection of ten million dead streptococci into the circulating fluid does not change the character nor the qualities of the fluid, but it does give millions of phagocytes an opportunity to whet their appetites on a diet of streptococci, without suffering harm, and thereby gain strength for a full meal of live ones. Who will say that the action of mercury on white cells is not the same as this, as regards their attitude toward spirochetæ? Or that quinine does not produce specific enmity to the plasmodii? Or that the salicylates do not urge these cells to devote their entire energy to hunting down the germ of rheumatism, and, to a less degree, the influenza bacillus or the streptococcus?

Sajous says that therapeutics must have as its foundation for the future, the production of artificial immunity—which is adaptation. So, when a microbic infection occurs, the aim must be to produce as rapidly as possible an adaptation of the cells of the body to the invader and its toxins. This is being done in our modern medicine for various diseases. The first step was the adaptation of the human nerve tissue to hydrophobia, by the administration of desiccated spinal cords infected with Negri bodies; then, vaccination for smallpox; then, diphtheria antitoxin; then, the treatment of tuberculosis with tuberculin; then, tetanus antitoxin; then, the treatment of streptococcic infections with streptolytic serum and streptococcic vaccine; and a host of similar preparations show the drift of investigation—the staphylococcic, the pneumococcic, the gonococcic, the colonic, the typhoid, the anti-dysenteric, the anti-choleric, the anti-bubonic. Many things hinder advance along this line; such as the tendency of bacteria to themselves undergo adaptation to the physical peculiarities of particular hosts; the limit of cells to react, cells continually stimulated

in one direction becoming exhausted and unable to respond to even the slightest stimulus from another influence; the uncertainty of laboratory products.

What place have drugs in such a therapy? We shall find, in the years to come, that, all unknowingly, we have been using many drugs correctly; but we are to learn many things, which we do not now know, about their actions, and these things will justify the title of this essay. In fact, having the causes of diseases within our knowledge, we shall some day be able to use drugs and specify biological products together, in such a way as to produce definite and accurate results—thus realizing the greatest aim of the true physician, to be always Nature's aid and never her stumbling block.

POINTS TO BEAR IN MIND, IN THE DIAGNOSIS OF COMMON SURGICAL INTRA-ABDOMINAL LESIONS.*

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I APPRECIATE the honor of having been asked to read a paper before your society at this 14th annual meeting, and at the same time I am conscious of the difficulty of presenting the large subject which I selected, in a short paper, as you requested.

This paper is based on personal experience gained in surgical work as visiting, attending, and associate surgeon to People's, St. Marks Hospitals, Manhattan, and Jewish Hospital of Brooklyn, respectively, and on a hasty review of the current literature on the subject.

The most frequent surgical lesions of the abdomen are appendicitis, cholecystitis, cholelithiasis, duodenal and pyloric ulcers and pancreatitis.

Lesions of the female organs belong strictly speaking to the diseases of the pelvis and will not be considered in this paper.

The diagnostic ability has in late years reached a high plane, of efficiency, by the untiring study and research, which resulted in the perfection of a thorough examination of the patient.

In addition to the usual examination of the abdomen by inspection, palpation, percussion, and auscultation, we are blessed with the advanced knowledge of the findings in the blood and urine, and in some instances by the aid of exploratory punctures and fluoroscopic or radiographic examinations.

Geographically the most frequent lesions in the abdomen are found and can be located to the right of the median line, in two circles having a diameter of about one and a half inches.

The upper one, situated below the costal margin, covers about 80 per cent. and the lower, in the region or somewhat underneath McBurney's point, covers about 20 per cent. of all the most frequent intra-abdominal affections.

Inspection.—By inspection observe the position of the patient. When there is local or general peritonitis the abdominal wall will be unmoved with respiration. The right and often also the left leg and thigh will be drawn on the abdomen when the disease is located in the right lower quadrant.

In cholelithiasis you will often find the patient lying on the right side, especially so when the gall bladder is overdistended with stones or fluid. This position gives some relief by the bed supporting the excessive weight of the bladder. Analogy of this relief is found by the suspensory bag supporting a pendulous or overdistended scrotum. Superficial, jerky, and rapid respiration points to perforation of an ulcer in the duodenum, stomach, or œsophagus.

In diffused general peritonitis the abdomen in some cases assumes a scaphoid shape. The pelvis and thorax are brought close together, the patient resting on the back. The concavity of the normal erect vertebral column at the lower posterior part, is converted into a convex shape.

When the acute lesion occurs during pregnancy or ascites, the long continued distention will attract your attention to scars or striæ in the skin.

In intestinal obstruction local or general there is distention and increased peristalsis. Distended veins around the umbilicus denote obstruction of the portal circulation, while thrombosis or compression of the inferior vena cava will show distended veins along the side of the abdomen.

In common duct obstruction the skin is jaundiced. Where a ball valve action occurs in the duct the jaundice is not permanent and at all times it requires daylight for its detection.

Marked anæmia in a young adult with a history of hematemesis or occult blood in the stools will point to gastric or duodenal ulcers.

Palpation.—Palpation is best accomplished with an empty bladder and rectum. The patient should be directed to hold the mouth open and take deep respiration. In children introduce the index finger of one hand in the rectum which will attract their attention to that part, in the meantime with the other hand go over the abdomen. Local or general rigidity indicates circumscribed or diffused peritoneal inflammation or reflex muscular contraction.

Palpate with the full palm of the hand in local or general peritonitis, press slowly and gently, the rapid removal of the hand gives more pain than the pressure. Avoid deep pressure with the finger tips over a palpable mass, it may cause rupture of the walls of a localized abscess. In circumscribed peritonitis palpation of the other parts of the abdomen will by intra-abdominal pressure cause pain at the point of inflammation.

In some cases of appendicitis where the appendix is enlarged and filled with concretions, but not adherent, you will observe an impulse or tap when on placing the left palm on the rigid muscles of the lower right quadrant, and on gentle pressure with the other hand on the left side of the abdomen; this is caused by the contact of the thickened appendix with the rigid right abdominal wall.

Wherever possible make a vaginal and rectal examination. A distended gall bladder with fluid or stones can be easily palpated below the right lower rib.

*Read before the American Medico-Pharmaceutical League, May 22, 1911.

Percussion.—Define the area of dulness and flatness of organs, growth and exudates, as well as tympany of the stomach and intestines.

When free gas is present in the peritoneal cavity the liver or splenic dulness is greatly diminished above and below the organs. A distended stomach or intestines will push the liver and gall bladder upward under the ribs and the spleen downward and to the left, we will therefore have diminished liver and splenic dulness below. In free peritoneal fluid the dulness or flatness is in the loins, which shifts with a change of the patient's position.

Auscultation.—This is of little or no value in frequent abdominal affections, but when used as a routine of examination one will unexpectedly be surprised by the bruits of aneurisms of the large vessels, or the compression by neoplasms or exudates as well as intestinal bruits made by gases and fluids passing through it.

G. Gluckman, in *Deutsche Med. Wochenschrift*, Berlin, March 30, 1911, describes his method of auscultating the pylorus and determines thereby its motor function, when and in what manner the stomach passes its contents along into the intestines.

Blood Examination.—In appendicitis a more or less marked leucocytosis with a relative increase in polymorphoneuclear cells is regarded as a sign of great value, especially when accompanied with tenderness and rigidity in the appendicular region, following a sudden attack of general or umbilical pain and vomiting.

Hyperleucocytosis in a marked degree we find also in inflammation of the gall bladder and acute pancreatitis.

Dr. Noehrm, in *Annals of Surgery*, February, 1908, concluded that a polymorphoneuclear percentage of 90 per cent. or more indicates a severe process that calls for immediate operative interference; a percentage below 78 means a safe or mild process; a percentage between the extremes speaks for the one condition or the other, according as it approaches the one extreme or the other.

Urine Examination.—Numerous attempts have been made to draw conclusions from changes in the urine indicative of abdominal lesions with fairly good results in some cases. When pancreatic juice fails to reach the intestines there is a diminution of indican and ethereal sulphates.

Cammidge reaction is supposed to differentiate the various forms of acute and chronic inflammation as well as carcinoma of the pancreas. He divides the test into A, B, and C. The precipitate in A is greater than that obtained with B, and claims that to be the distinguishing point between acute, chronic, and malignant disease of the gland. B reaction is caused by glycuronic acid and reaction C removes it by basic leadacetate.

The Phenylhydrazine test applied to urine previously boiled with strong HCL and that treated with basic lead acetate causes in cases of pancreatic disease the formation of yellow crystals which are soluble in dilute HCL and have a melting point near 160° F.

Cammidge believes the reaction to be dependent upon the presence of a substance which by hydrolysis with strong acid yields a body giving the reaction of pentose.

The urine examination of a number of other diseases have, however, responded to the Cammidge test and can therefore not be considered a reliable guide to diseases of the pancreas without additional evidence. When the whole pancreatic gland is involved we find glycosuria. Fat necrosis is due to the action of the fat splitting enzyme secreted by the pancreas and when the enzyme is free in the tissues it may be secreted by the kidneys.

Biliary pigments in the urine points to obstruction to the outflow of the bile.

Stool Examination reveals in gastric or duodenal ulceration traces of blood. In obstruction to the outflow of bile there is the characteristic light colored stool. In some cases of cholelithiasis stones may be found in the passages. Fatty stools is indicative of advanced degeneration of the pancreas.

Chemical analysis of gastric contents is not of great value. In gastric and duodenal ulcers we may have a normal, subnormal or abnormal amount of acid. Free acid bears about the same relation as does the total acidity. The older the patient the lower are the acids. Some have no free acid in the test meal and resemble gastric carcinoma. The test meal finding from pyloric spasm as the result of appendicitis or gall stones may also be the same as that of ulcer. We therefore cannot rely too much on the test meal unless when taken in conjunction with the clinical findings.

X-Ray Examination.—By means of the fluoroscopic or radiograph we may discover stones in the gall bladder when they are not penetrable by the rays. Biliary calculi, however, rarely cast shadows. Pancreatic calculi contain either calcium carbonate or phosphate and consequently are opaque to the X-rays, in which respect they differ from gall stones.

Having gone over in a general way the various methods for diagnosis, I will now very briefly try to bring out some of the salient points necessary to bring about a diagnosis in the above enumerated frequent diseases.

Appendicitis.—The diagnosis of appendicitis is easily made when the appendix is in its normal position, and several hours have passed since the beginning of the attack; when, however, the appendix is not in the usual situation, one may be easily misled in the beginning of the affection.

It often resembles acute gastric or intestinal indigestion, toxæmia, biliary or renal colic and intestinal obstruction.

In women it sometimes happens to be impossible to differentiate an acute right-sided salpingitis from appendicitis, when the appendix and tube are both involved in the same inflammatory mass.

I have operated on widows and girls in whom the diagnosis of appendicitis were made by the family physician as well as by two or three other doctors who were called in and on opening the abdomen I found an unfortunate right-sided ruptured or unruptured ectopic. In other instances right-sided pyosalpinx were present.

A careful history without being influenced by the social position of the patient would have prevented the pitfall in the diagnosis. Appendicitis complicating pregnancy often simulates pyelitis of pregnancy. In these instances the finding of pus in the urine or cystoscopic and ureteral catheterization will clear the

diagnosis. In children one must be mindful that a right-sided lobar pneumonia simulates appendicitis. Tubercular patients who complain of long-standing pain in the appendicular region with some palpable thickening have as a rule tuberculosis of the appendix and ileo-cæcal junction.

Cholecystitis. — Cholecystitis is easily diagnosed by palpating the swollen, tender gall bladder; its rounded form, mobility and tension is characteristic. Jaundice is rare. The occasional bulging mass moves with respiration. There is a fever ranging from 100° to 104° F. in the acute cases, vomiting and epigastric pain is often present.

Cholelithiasis —When we are confronted with true cholelithiasis we have a history of indigestion associated with flatulent distention. Biliary colic. The attack frequently awakens the patient at night with intense, agonizing pain, in the right hypochondriac region and radiating to the shoulder and in some cases down to the sacrum. Others complain of pain across the back. Fever and chilliness is present in some cases and when it occurs it implies absorption of toxins into the general circulation from inflamed and ulcerated biliary passages. The pain is indicative of the passing of a caluculus from the gall bladder through the narrow ducts to the intestines and is therefore paroxysmal. With the onset of a hepatic colic the patient forcibly gets hold of the right side or presses it against the bedding. When asked to show where the pain is most intense they will place their fingers below the free border of the ninth rib to the right of the rectus muscle, if the calculus has passed further on into the common duct the pointing fingers will locate it about two inches to the right of the umbilicus.

Should a stone become impacted in the common duct jaundice rapidly follows with the usual bile stained urine. The feces are the color of pipe clay. Palpation seldom reveals anything, as the cystic duct may be clear. The liver is not enlarged. There are no septic symptoms unless an ascending infection of the hepatic duct takes place. When the duct dilates behind the stone, as it occurs in chronic obstruction, the bile escapes around the stone and the jaundice lessens or disappears. The cystic duct remains open when the stones are located in the gall bladder, there is colic and pain, but the bladder is not distended.

When stenosis or obtsruction by calculus takes place in the cystic duct the bladder is distended.

When the stone is permanently arrested in the common duct it usually lodges at the sphincter in the wall of the duodenum.

The jaundice present will not be accompanied with pain or colic, but the previous history of having had attacks of colic will distinguish this form of jaundice due to other causes.

Jaundice produced by tumor pressure gives no history of previous attacks of chills and rigors as in the case of calculus.

Tumors of the head of the pancreas inevitably cause jaundice, while hepatic cancer is accompanied with jaundice in about fifty per cent. of cases.

Duodenal Ulcers. — As to duodenal ulcers, a good many are impossible to differentiate from uncomplicated ulcers, at the pyloric end of the stomach. Their occurrence is more frequent than formerly supposed. Codman, after carefully studying the subject, is convinced that duodenal ulcer is almost as frequent as acute appendicitis. His experience is supported by J. B. Deaver, who believes that within ten years the truth of the assertion will be as convincingly demonstrated as in the case now with the once rare disease appendicitis.

The principal point to bear in mind is that the patient is a chronic sufferer with acute periodical exacerbations, that the pain is peculiar and known as gnawing or burning in character with discomfort of gas, sour eructations, and vomiting of food and water, about two hours after meals. Other patients describe a sense of hunger which is relieved by eating and filling the stomach with food or alkalies, or stomach washing. The complaint of sour stomach is usually due to hyperacidity of gastric secretions.

Advanced cases, where the ulcers are deep and cover a large area, have capillary oozing and in some instances decided hemorrhage. When medical treatment has been successful the ulcerated area cicatrizes and contracts with at times resulting stenosis of the lumen. This stenosis is also the result of surrounded thickening of the edges of the ulcer. Where the cell proliferation producing the thickened edges are excessive we can feel a mass on palpation. This palpable mass is not absorbable, is intractabile, and can only be removed by surgical intervention. Patients who have been unfortunate to gain only partial relief from drugs continue to suffer until the ulcer perforates.

In some cases there are no previous symptoms or only a little indigestion is noticed. With exception of acute toxic cases, it is a chronic ulcer of the duodenum which perforates. When that happens the pain is intense and overwhelming and as a rule referred to the whole abdomen, after two or three hours it is of greater severity on the right and upper quadrant. The rigidity is well marked and absolute with excessive sensitiveness. Respiration is superficial, short and jerky in character. The rigidity only lessens when peritonitis begins to develop or toxæmia is profound. Alexander Miles (Edin. Med. Journal, 1906, Vol. 2, Pg. 224) states that he found a "remarkable correspondence between the site of maximum tenderness and the seat of the perforation."

When the most tender area was in the left hypochondriac region the perforation has almost invariably been toward the cardiac end of the stomach; when around the umbilicus in the body of the stomach, when in the right hypochondrium near the pyloric end or in the duodenum "so constant is their correlation" that he relies upon it as a guide to the site of the incision.

Duodenal ulcer is frequently mistaken at the early onset for a high-seated inflamed appendix, but when we bear in mind the following points of distinction mistake will be a novelty.

Appendicitis and ulcers attack begin abruptly with pain acute and sudden in onset, referred often to the epigastrium or to the whole abdomen, and later it is upon the right side of the abdomen. The history, however, will show the absence of characteristic periods of indigestion in appendicitis and that there was some pain and constipation for which a cathartic has always been taken or an enema given. The agony and rigidity is not so marked. The breathing is reg-

ular and not short and jerky as when the diaphragm is tightly held.

Pancreatitis.—In acute pancreatitis the onset is sudden with pain most violent in the epigastrium followed by nausea, excessive vomiting and collapse and in the course of about 24 hours by a circumscribed epigastric swelling, tympanitic or resistant, with either subnormal or slight elevation of temperature. The pulse is bad, thin, rapid, and of poor quality. The face and at times the upper part of the trunk is deeply cyanosed. Mayo Robson attributes acute attacks of pancreatitis to the invasion of bacteria through the ducts. The acute and chronic form is often associated with the cholelithiasis and is not as easily diagnosed as that of other frequent occurring abdominal lesions, because the location of the pancreas is obscure. Clinically it looks like an epigastric peritonitis, and in some cases the enlarged œdematous pancreas may be felt on deep palpation. The acute violent attacks are not so frequent as those milder forms which often subside without notable incident, so that the true nature of the attack escapes recognition, and is ascribed to acute indigestion, gall stone, colic, or if prolonged to gastritis. A history of dyspepsia may date back months or years.

When glycosuria develops in person with chronic cholelithiasis or with cirrhosis of the liver, we should suspect chronic inflammation of the pancreatic gland.

The abdomen when opened shows fat necrosis over the mesentery and omentum in the neighborhood of the pancreas.

The relation of sex to chronic pancreatis as compared with cholelithiasis is reversed. John B. Deaver found twenty-two males to sixteen females, Opie seventeen males to thirteen females. Boehm also claims that 62 per cent. occurred in the male sex.

In differentiating it from gastric or duodenal ulcers it is noteworthy that it has no relation to eating or to any particular articles of food. A hardened nodular pancreas of advanced inflammation may resemble carcinoma by direct inspection and palpation. Even the glands of the neighborhood may be greatly swollen as though by extension metatasis. Deaver states "in one case not only was jaundice and wasting present, but there was marked ascites due probably to the biliary cirrhosis or to the pressure of the thickened head of the pancreas on the inferior vena cava."

When jaundice is marked loss of weight and strength takes place in some cases. The appetite is usually fairly good, but there are evidences of disturbed gastric motility, such as delay in the emptying of the stomach after a test meal with a diminution of or absence of free hydrochloric acid, and ferment from the gastric juice, and the presence of lactic acid.

The functional disturbance must not only be attributed to the diseased condition of the pancreas, for we also find it in affections of the gall bladder and its duct.

In conclusion we must be mindful that a careful and correct taking of a history will be of more advantage in reaching a diagnosis in many cases, than one based purely on the actual findings at any particular moment.

Localization of pain is not to be relied on since pathological contortions and displacements of organs refer tenderness to other regions of the body.

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CHOREA.

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THE alkalometric treatment of chorea began with a case reported by Burggraeve in 1873. This was a boy aged seven years (the tendency to the malady inherited from his mother) for two years affected with choreic convulsions recurring periodically once or twice a week, the pupils widely dilated. Under the diagnosis of worms santonin was given, without result. He was placed upon zinc cyanide, six granules, a milligram each, *per diem*. In three weeks the movements had ceased, and in three months had not reappeared. The child had re-entered school.

Oulmont reported a number of cases successfully treated by sedation with hyoscyamine.

Burggraeve had a case in a child six weeks old; hemilateral, in which other treatment had failed. He was given strychnine until reaction occurred, then a drop of laudanum every half-hour until after the fifth dose he slept. Strychnine was then resumed, with a cure in three days. Two other infants under three months of age were similarly treated, with recovery in less than a week. Each received one to three milligrams of strychnine sulphate.

Vigouroux reports a girl in her thirteenth year, thin and anemic from rapid growth for some months, choreic on the right side. The attack was recent; she could not feed herself readily or walk well. Chloroanemia dominating the scene, she was given brucine Gram 0.0005, hyoscyamine 0.00025, zinc valerianate 0.01; six times a day. At the end of eight days there was no change, the malady following its course. One daily dose was added. In another week the movements affected the whole body, but were less violent. Iron valerianate 0.003 was added, and in another week the improvement was manifest. The cure required two months for completion.

For a girl aged thirteen, Ferran ordered soda arsenate 0.0005, iron valerianate 0.001, calcium hypophosphite 0.01, and hyoscyamine 0.00025, three times a day, before meals. Morning and night also she took a granule of atropine valerianate 0.00025. At the end of the month she was well enough to return to school. A boy aged ten years had an arthritic and nervous heredity, had had scarlatina, measles and rheumatism; and a bad fright as an excitant of the choreic outbreak. He was given Seidlitz salt and enemas, veratrine, sodium salicylate, arsenic and hyoscyamine; at 8 and 10 quinine hydrobromide and atropine valerianate, a granule each. As the nights became quiet these were discontinued, and strychnine arsenate and quassin, a granule each, added to the other prescription. A rapid cure followed.

Vigouroux reported another case, more serious. This was a girl aged seven years, very lymphatic, nervous, anemic and meager. She ate little and her sleep was disturbed. She had had two frights, and had been choreic for ten days. The father was rheumatic. Prescribed, strychnine sulphate gram 0.0005, hyoscyamine 0.00025, a granule each every two hours, ten doses a day; iron and zinc valerianates, two granules, gram 0.01 each, four times a day; on account of the extreme weakness soda arsenate in tincture of columbo, before the midday meal. Four days later she was worse. Continued treatment, with a bath of linden every four days. Three days later she was still worse. Added two granules strychnine sulphate and one of hyoscyamine. Four days later she had to be restricted to bed, being unable to keep from falling. Continued, adding chloral hydrate gram 3.0, syrup of orange flower 30.0, distilled water 60.0; a spoonful at intervals. It was not for six days more that the improvement was really manifest, and eleven more before she was allowed to rise. In nine more she was out of doors.

Some years later, in 1907, Vigouroux presented the case of a boy aged twelve years, with left hemichorea of four months' duration. Two years previously he had been similarly affected, when he had been treated with antipyrin for 6 months ineffectually. He was excessively anemic, eating scarcely anything and digesting it poorly. As dominant he was given strychnine sulphate, a granule every two hours by day, iron and calcium glycerophosphates 5 granules, gram 0.01 of each twice a day, before meals; as variant for the nervous disequilibrium camphor monobromide two granules 0.01 each, every two hours. Eight days later he was better, eating and digesting well, and sleeping so well as to render croton-chloral unnecessary. In another week the improvement was so great that the camphor was reduced to three doses a day. He was discharged as cured in forty days.

This comprises all I have been able to glean from the French dosimetrists of recent years on the treatment of chorea. It is not much. The best that can be said of it is that it is better than the ordinary treatment. But it shows the state of French dosimetry clearly. It is dying of inanition, due to too much commercialism and too little science. It has made no additions to its armamentarium for years, but works over the old, well-worn heap, of which all has been already said that can be said. Burggraeve, Ferran, Castro and Laura are dead. Van Renterghem has gone after strange gods, of the psychopathic order, and the men now living seem content to accept the work of those great men as completing the cycle, admitting no further progress. The colonies have disappeared, the parent journal becomes trite, dull, feeble, and contracted.

Here in America alone the work is vital and progressive. It is alive, because those who recognized the great importance of the matter also saw that it was not a new school but a reform within the ranks that was needed; that despite the immense value of the movement it was but a part of therapeutics after all, and could not live if dissociated from the body of the profession. A full comprehension of the powers of the active principles must not blind one to the value of other therapeutic methods. To illustrate we present some further views on the treatment of chorea.

Chorea is a malady of diverse causation, and the treatment must begin with the etiologic element. There is a nerve leakage somewhere, from the irritation of defective ocular accommodation sometimes, from a tight prepuce, a spasmodic anal sphincter, or some other of the multifarious imperfections that cause a constant irritation and deplete the nerve forces. When to this we add the influence of a stream of fecal toxins contaminating the blood, we merely repeat the stereotyped formula for most affections of the nervous system. The delicate, highly differentiated structures of the neurons do not relish such impurity in their food-supply, and the consequences are visible at the point of lowest vital resistance.

Find and remove the exciting causes, clear the bowels and disinfect them, regulate the diet carefully, and then the first principle of treatment is fulfilled. For the second we prescribe REST. Put the child in bed, forbid all visitors who exhaust the forces by the attention they require, even at the best. Forbid play; make the child keep quiet, remembering that monotony is here curative.

All treatment must be regulated by the neurasthenic formula, remembering the speedy exhaustion of irritability and employing very small doses, carefully watched that they are not carried too far. This applies to the iron for anemia, the food, the cod liver oil for emaciation, the materials for the too rapid growth that is often present.

Excessive agitation may prevent sleep and threaten exhaustion. Give glonoin here, in full doses. Replace chloral which is efficient with cicutine hydrobromide which is better; giving just enough to get the best effect. Morphine may be unavoidable, but this is very rare; be ready to give it if really needed. Hyoscyamine is not well chosen here, because it increases cerebral irritability, already too high. Nor is strychnine advisable, since it adds to reflex irritability and accentuates all forms of sensation, rendering the patient more disposed to react against slight stimuli, exhausting the vitality more rapidly. The only benefit derived from it in doses used must have been due to its stimulation of intestinal peristalsis, which was needed and neglected. Cicutine hydrobromide was the especial sedative indicated, and gelseminine for cases displaying more cerebral irritation than usual. The use of hyoscyamine and strychnine here shows the tendency to routine, and contraction of practice to a few agents, common to all of us and especially to the French followers of Burggraeve. In this they dis-

play the same tendencies as the "Hahnemanniacs," who ignore the possibility of progress and imitate their master in his faults as well as in his really valuable features.

I must confess to utter failure to secure any curative action in chorea from any form of arsenic, beyond its influence as an antiseptic in the stomach and duodenum. Others may have been more fortunate or skilful.

In the declining stages, and then only, the preparations of cimicifuga have proved uniformly successful, sedating irritable nerves, and steadying the circulation. The action resembles that of digitalin but is milder. The dose needs careful adjustment, and if the point of gastric irritation is approached the remedy harms. A centigram of macrotin every hour until nausea is experienced, the number of doses noted, and two less constitute the daily allowance, is a good way to regulate dosage.

The universal mistake lies in treating chorea as a disease, a pathologic entity. Nothing can be farther from the true path. The man who treats a series of choreics with one remedy, antipyrin, hyoscyamine, cicutine, does not comprehend the laws of modern scientific medicine. I shall emphasize by repetition:

Search out and remove the sources of nervous waste; clear the bowels and put an end to fecal toxemia; sedate the morbid spinal irritability with cicutine; treat the anemia if it is present with chalybeates, the emaciation if present with cod liver oil, any other pathologic condition that may be present, however slight or apparently inconsequent; steady the wobbly circulation, regulate the personal and domestic hygiene carefully, establish a regime that will give the most complete physiologic and psychologic rest the circumstances permit, and drop the crude idea of a specific for the malady. Then you will commence to appreciate the value of the newer therapeutics, that aims at the disorders of physiologic function remedies that exactly fulfill the need, and "hit the bull's eye" every time.

HOT WEATHER OBSERVATIONS.

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THESE desultory observations are begun "the morning after" the quite unprecedented hot spell which has for several days past afflicted our people from the Atlantic to the Rockies—a heat in which, on the Maine Coast (where I am writing) from ninety to above one hundred degrees was reached day after day. The press relates how many succumbed in our great cities; but it does not note the much higher mortality indirectly attributable to this dreadful temperature—the deaths from "heart failure," kidney and hepatic disease, tuberculosis, dysentery and so forth, which would otherwise surely not have occurred.

On one respect the high temperatures in our latitudes affect us more disastrously than do those in the tropics by reason that they are occasional, whilst the tropical temperatures are constant and equally high. Those inhabiting the torrid zone expect such temperatures, prepare themselves accordingly, and adjust themselves to the circumstances; we on the other hand adjust ourselves to what the geographers, with somewhat grim humor, term our "temperate climate," when all of a sudden we are caught in a descent of humid heat that would make visitors among us from India "sigh for Calcutta." We have indeed a climate that behaves outrageously. An English diplomat stationed at Washington once found a June temperature that nearly prostrated him, and wrote home that "one quart of the American summer climate would thaw out all Europe." Everyone recalls also that when those Russo-Japanese statesmen visited us for the purpose of settling their little difficulties, Portsmouth, New Hampshire, was selected as the place for their deliberations as being a particularly cool place; whereas it became and continued about the hottest within our borders.

There has been no little written and spoken (not without heat such as the weather is not responsible for) on the subject of summer dress. We are told by visitors from the east, and south of the Tropic of Cancer that we do not wear rational clothing during the heated term. Americans who go to Manila will dress in cool linen; whilst at home they gasp, perspire, and disintegrate as to their psychism, in clothing that has no relation whatever to the thermometer. Why do we not frankly go over to tropic garb whilst our weather is tropical; why do we not, like the revered Mark Twain, go about clad in white samite, though we may none of us even hope to appear as "mystic and wonderful" as he; why do we not at any rate eschew woolen clothing and be comfortable in linen and duck, with little or nothing to separate it from the skin. One potent reason, of course, is our slavery to custom; another is that just intimated: Should we to-day don linen and duck, we should to-morrow, like as not, need an overcoat. "No man," wisely writes a cotemporary, "can be sure, when he sets out to write on a sticky morning about the oppressive temperatures of New York, and the need of sensibly conforming to them in dress, that by afternoon a thunderstorm or a cool wave will not have brought relief to those who read his words, and set them laughing at his being betrayed by the weather." In every heated term we are expecting that to-morrow, or very likely indeed the next day, but quite positively the day after that, we shall have it quite cool again.

Thus, like our climate and our politics, our ideas about hot weather dress are a good deal mixed. Nevertheless we have of recent years made marked advances in common sense summer dressing. The shirt waists of the women seem always cool, as certainly they are comely. Thirty years ago broadcloth frock coats and hot "tiles" to match were costumary on our thoroughfares; these garments we reserve now quite entirely for the winter months. We cannot remember portraits of Abraham Lincoln, Daniel Webster, Commodore Vanderbilt and our other great men of a generation ago otherwise than as clad in voluminous coats, high collars, elaborately laundered shirts, and the inevitable top hat: Who, it is pithily observed, can conceive of a William Cullen Bryant in shirt sleeves? To-day, on the other hand, our President smiles upon us breezily from the public prints,

unvested, in a light sack coat and with a straw hat; and all our representative men are clad like unto him. As it is, when we go a-summering across the pond we scandalize the European by our négligé shirt and waistcoat that "glares by its absence." Your London lawyer or stock exchange man would not to-day, howsoever hot, venture across the street without that badge of the gentleman, the silk hat, fastened upon his brow.

Mention has been made of Bryant the Poet; and all who work with the pen will appreciate his observations concerning the heat of a New York summer, in a letter to his wife in 1825: "I envy you the pure air, the breezes, the shade and the coolness which you must enjoy in the country, whilst I am sweltering under a degree of heat which I never experienced in my whole lifetime for so long a period. For six days the thermometer has hardly been below 80, day or night. I cannot write except in the morning, when the air is a little cooler; but in the middle of the day, when the thermometer is at 85 or 87 it is almost impossible to call up resolution enough even to read. Yesterday in the afternoon I rode a few miles into the country; I found it worse, if possible, than the city. The roads are full of carts, barouches, chaises, hacks, and people on horeback passing each other; and a thick cloud of dust lay above the road as far as the eye could follow it. It was almost impossible to breathe the stifling element." It is a pity Bryant could not have had recourse to some of our twentieth century novels, which are, not a few of them, delightful and almost the only possible intellectual diversion in stretches of hot weather.

To revert for a moment to clothing: Our ideas on this subject have (chiefly through the writings of Major Woodruff) been greatly changed. White colored garments have up to recent years been considered appropriate for hot weather; but here, it seems, we have been in error. It is pointed out that among animals white coverings of fur or feathers are the almost invariable wear, not in the tropics, but in the arctic regions; they are rare in the temperate zones and practically unknown in lands where the sun is fierce. This cannot be accidental; and the circumstance will be instructive to the reflective. We have no doubt associated coolness with whiteness because white cloth is usually thin; and the thinness counts for more than the color. Yet cloth can be made both thin and dark; and of such cloth the coolest garments could certainly be made. Our army officials have discovered by actual thermometer tests that blue or yellow tents show a difference of interior temperature amounting sometimes to ten degrees when standing beside white ones in the full blaze of the Philippine sun. In Panama, moreover, all the "administration" houses, barracks and shops are painted almost black; and the occupants have suppressed the sense of the lugubrious pertaining to this color because they have found that black houses are cool, or at any rate cooler than those of any other color; and that white houses are the hottest of all. We have also learned that white reflects or transmits the short length, or actinic, light rays, while the darker tints do so either not at all or to a less extent; it is these rays which cause acute dermatitis—sunburn, from which perhaps, rather than from the heat rays, come most of the sufferings that are endured in the summer months.

Thus should not only our visible summer garments be dark colored; but our underclothing as well. It was pointed out a year ago that opaque clothing is becoming popularized; a demand has arisen for it, not only in the tropics, but in America also—a demand so great (it was stated) that manufacturers are flooding the market with enormous quantities of black undergarments.

The question of diet becomes all-important in high temperatures. And here Winifred S. Gibbs, the Dietician and Teacher of Cooking of the New York Association for Improving the Condition of the Poor has written most wisely: Vitality is lowered even more by long-continued heat than by the same period of cold. In hot spells many persons are like children, yielding to impulse even when they have the knowledge requisite to maintaining their good health. One does not need to be up in chemistry for the framing of a hot weather dietary; only a few underlying principles need to be appreciated:

One should eat what experience proves to be the best for his individual idiosyncrasy; this does not mean constantly thinking about what food "agrees" with one—but simply to be sensible and not to indulge in anything that is known to be harmful. Meat is to be eaten once a day; we should alternate this with fish, if it can be assured absolutely fresh. (Of this I for my part make sure by catching in the afternoon the fish I eat the following day.) Get the needed strength at two meals from milk and eggs and from dishes in which these foods have been incorporated —such as milk soups and custard puddings. Use crisp breads instead of fresh ones or pasty cereals. Use fresh green vegetable salads freely; dressing them with plenty of good oil and a dash of vinegar. Oil and butter are fats and thus to a certain extent heat giving; but they are not heavy and keep up bodily tone, which is apt to be depleted by long-continued heat. For deserts use perfectly ripe fruits, water ices flavored with fruit juices, or custard puddings. For beverages—use tea and coffee as seems best but in moderation (excess in coffee has a peculiarly depressing after effect, as probably many of my colleagues will agree). A sudden cutting off of either of these beverages is not advisable, however. Alcohol (except very moderately) is especially pernicious in hot weather; it is oftentimes the cause of heat prostration. When the appetite absolutely refuses to respond to any food, it should not be forced at meals; satisfy thirst and relieve heat exhaustion by systematic drinking of cool milk—a glass of milk at ten in the morning, another at two and another at four, if there is to be a late dinner. Make up bodily loss which comes from excessive perspiration by drinking freely of moderately cool water.

As to heat exhaustion: I would here but emphasize how diametrically opposite is its therapy to that of sunstroke; by reason, of course, that the respective conditions differ radically. Heat exhaustion is characterized by prostration, cool or clammy skin, often subnormal temperature, small and frequent pulse; it is an asthenic condition. The treatment requires aromatic spirits of ammonia, strychnine and other stimulants; a warm bath for the subnormal temperature and perhaps hot water bottles to the feet—

but no ice. Sunstroke, heat stroke or thermic fever is, on the other hand, an asthenic condition, which comes about generally through severe exertion whilst exposed directly to the sun or to high temperatures. The use of alcohol predisposes. In severe cases the patient falls unconscious, and death comes almost immediately or in a few hours of coma with dyspnœa. Ordinarily there may be sudden arrest of perspiration, premonitory headache, dizziness, sometimes nausea and vomiting; colored or indistinct vision, then unconsciousness, which may be temporary or may increase to deep coma. The face is flushed, skin dry and hot, the pupils temporarily dilated, then usually greatly contracted; there is muscular relaxation, sometimes muscular spasm or convulsions; the temperature may exceed 108, even 110; the pulse is frequent and full; the respirations are deep and labored or stertorous. In fatal cases the coma deepens, the pulse becomes frequent and feeble, respiration rapid, irregular, shallow or Cheyne-Stokes; death in twenty-four hours to two days. In other cases consciousness returns, temperature falls, pulse and respiration become normal, recovery is complete or with sequelæ. The patient may be predisposed to subsequent attacks or he will remain constitutionally weak; memory and power of mental concentration are impaired; there is headache or mental disturbance in warm weather. By way of prophylaxis alcohol is cut down or cut off—better the latter in hot weather; exposure and undue exertion are avoided. Mild cases must rest in as cool a place as possible; cold sponging. Severe cases must be immediately bathed in ice water; cutaneous friction with ice; enemata of ice water. Strip and sprinkle with water (if ice is not at hand) until temperature is reduced; venesect, abstracting twenty ounces; it is recorded that the life of Weir Mitchell was saved by this means. As to sequelæ: avoid exposure to heat. Ice cap to head to relieve pain.

WHY IS LAZINESS?

BY JOHN AULDE, M D., PHILADELPHIA, PA.

IT seems stupid to ask so simple a question, and yet there is such a diversity of opinion upon this subject that it is worth while to consider the question in its various bearings. There is a general belief amongst scientists as well as on the part of the laity that the love of work and activity is an acquired rather than a natural tendency — this deduction being based upon the generally accepted view that human tendency is toward the line of least resistance. While these popular notions may seem warranted and applicable in some instances, it is very doubtful if this supposition can be established as a reliable criterion. Undoubtedly, this is true in general of different races and ancient tribes, but it evidently fails to convince the careful observer when applied to civilized people—this being shown beyond question in the marvelous achievements which have taken place, not only in this country, but in all other civilized nations.

Still. it must be admitted that laziness does obtain in a greater or less degree in every country; in fact, there is an indefinite percentage of lazy people the world over, and it is well known that many persons who are normally active, industrious, enthusiastic and progressive, including inventors, teachers, bankers, merchants and ministers, experience attacks of indisposition or laziness. Hence, the inquiry takes on peculiar significance. Laziness being admitted, and a reasonable excuse being advanced, it behooves us to make an inquiry as to the fundamental causes for its appearance—in other words, the question is, How is Laziness?

Starting with the proposition or premise that laziness is essentially an evidence of lack of energy, we should make inquiry as to the original source of energy. M. Ribot—Institut de France—a well known medical scientist and speculative philosopher, has put this question in a very practical form, suggesting that energy is dependent upo.. two widely separate causes; that is, energy occurs or develops in two different forms, the one internal, such as foods, the other external, such as sensorial excitations. While this statement seems to be practical, it is still not available as an aid in our efforts to determine why laziness occurs, nor how it occurs. It will, therefore, be convenient to study the question from the two different standpoints, viz., potential energy and freed energy. In other words, we must endeavor to discover, if possible, what interferes with potential energy to inhibit freed energy and produce laziness. Evidently, the defect lies in this direction, and if we can determine with a reasonable degree of precision what interferes with or impedes potential energy, we shall establish the fundamental basis for the appearance of laziness. In short, we shall be able to say just how laziness develops.

M. Ribot refers incidently to the arguments which have been hitherto advanced to account for the vice of laziness. For example, moralists claim that laziness is due to lack of will-power and that education is competent to deal with it. He also says that the psychologist has advanced the argument that laziness is of organic as well as of mental origin. Furthermore, he states that scientists have discovered in such instances that there was a lack of tonicity in the system, that the heart beats were weak, and that arterial pressure was low. Such being the case, our scientific friends claim that laziness is due to lack of nourishment, the brain being imperfectly supplied with blood.

In this connection, he cautiously points to the possible tendency in the quality of blood which makes prohibitive any continued energy and concentration, and this theory seems to be well founded, because we often find these patients suffering from anemia although apparently well nourished. It is evident, however, that something tangible in every physical make-up inhibits the potential energy so that they present all the usual symptoms of laziness.

Recent investigations by physiological chemists have thrown a flood of light upon this important inquiry, by showing that chemical deviations in the nervous system are responsible for the physical depression as well as for the lack of capacity for mental concentration, and it is not difficult to understand how laziness may be brought about by what may be termed chemical deviations in the body fluids and tissues. The human organism resembles in some

respects the electric battery; having potential energy, it produces the current and this continues until the fluid is neutralized, when the current gradually ceases. Familiar examples are seen in the case of telephones and telegraph wires, where exhaustion of the potential energy results in failure to transmit the usual sounds. So it is with the human organism. Derangement arising from defective assimilation, primary and secondary, gives rise to an excess of acid in the system. This acid excess, of course, diminishes the alkalinity of the blood and hinders its capacity for carrying oxygen, so that oxidation is lessened, waste products accumulate, and thus interfere with the uninterrupted transmission of nerve impulses.

It will be apparent, therefore, that this condition may appear at any age, and thus produce the usual symptoms of laziness, although M. Ribot advances the theory that there is a certain analogy between the inertia of the so-called lazy man and that of the aged individual. In fact, he says that laziness is a kind of anticipated old age, although in this conclusion, he is evidently in error. The fact is that laziness in early life arises from the causes stated, while the laziness of old age is due to senile decay with evidences of crystallization of the inorganic principles. In youth and adult life, it is quite possible to correct the "habit," while in advanced age, it is impossible to recreate or regenerate the wasted and infirm tissues.

While the chemical problem in nutrition is rather abstruse to the layman, to the physician it is readily comprehensible. For example, one of the first tests to determine the physical condition of the patient, that is, the status of the potential energy, is to test the saliva with blue litmus paper. Should this chemical test give an acid reaction—turn the litmus paper red, light pink or bright pink—he knows that this patient suffers from an excess of acid, and like an electric battery, the nerve impulses are not properly and promptly transmitted. In other words, the excessive acidity of the body fluids has interfered with nerve conduction, and as a matter of fact, the patient feels indisposed, lacks mental concentration, and is averse to physical exertion. Next in order, he will test the reflexes; that is, he will ask the patient to put one leg over the other, and then gently tap the tendon below the knee-cap. Acid excess will then show that the reflexes are exaggerated or absent altogether, and these evidences prove that the above statement is correct, that there is impairment in nerve conduction. Examination of the heart will further confirm this statement. The action of this organ will be found lacking in rhythm and the contractions incomplete, so that the blood is not properly distributed throughout the system. This is further shown by feebleness of the pulse, evidence that there is lack of compensation, due to failure in the potential energy. It is similar to the condition found in mechanics. When the piston in the cylinder does not "cushion" properly, it shows that there is lack of steam pressure.

So we might proceed almost indefinitely to point out the defects arising from lack of compensation or failure in the potential energy as a result of chemical deviations in the fluids and tissues, but this deviation to which we have referred is the beginning rather than the end of the trouble. The presence of acid in excess gives rise to chemic deviations affecting the inorganic principles, such as lime and magnesia. Lime, being the stronger base, combines readily with the acid, by which process it is eliminated from the body tissues, magnesium taking its place. Thus, we have abnormal tissues, including nerve tissues, which have been depleted of their lime content, and, unfortunately, replacement by magnesia, which is a non-conductor, interferes with the transmission of the electric current, the energy upon which the transmission of nerve impulses depends, so that we have to deal with magnesium infiltration. When this condition involves the nerve supply of the heart, it diminishes compensation; when it involves the brain, the magnesium deposits render concentration difficult, and may even produce symptoms of paralysis even in young persons and those of middle life. We have examples of this following severe attacks of disease such as diphtheria, scarlet fever, pneumonia and influenza. In the latter case, it is not unusual to find the patient seriously affected through this abnormal deviation, manifested by recurrent attacks of neuralgia, persistent neuritis or possibly sciatica. In the case of children suffering from summer complaint or even simple fever, we have infantile paralysis, for which there is no known remedy at the present time.

The successful treatment of these cases is likely to prove an interesting experience in the near future, from the fact that we now understand how the disorder is produced, what chemical deviations take place, and by proper measures, we shall be able to neutralize the acid condition, at the same time, employing suitable chemicals for the purpose of promoting magnesium dissociation according to the principles laid down in chemical text-books.

Finally, the disorders mentioned should be regarded as extreme evidences that chemical deviation is responsible for the more moderate symptoms recognized as laziness, brought about through attacks of disease. The destinction relates to differences in degree rather than in kind, and as a mere curiosity, it is a very simple matter for any one who feels that he is indisposed or lazy to test the salivary reaction as well as the reflexes.

Teach the Sick to Juggle.—Apropos conjuring, the allied art of juggling is one of the most amusing and valuable of diversions, especially to the sedentary, observes American Medicine. Many physicians become expert in juggling; but it is to their patients that it is most useful. The bedridden, if they retain the use of their hands, may beguile many a weary hour in learning to keep three of four tennis balls in the air at once and in balancing sticks and other simple objects on the forefinger or on the chin. For the brain-worker who does not care for walking there is no better recreation. In cases where there is no reason to fear some form of paralysis the educating of disused cerebral, cerebellar and spinal centers by the rapid and complex movements required in juggling might be an efficient preventive. Such manual education tends to perfect nervous poise; no juggling trick can be properly done if the performer indulges in dissipation, be it even so mild as beer and cigarettes.

DRACONTIASIS.

BY S. R. KLEIN, A.M., M.D., PH.D.,
Consulting Pathologist and Bacteriologist of the Bobrow Laboratory; Director of Fordham Research Laboratory, et., etc.

SOME time ago the Biologists thought, that the embryo can infect the human body by the skin or mouth quickly, in about 24 hours. As the last research work shows, they can *not* develop in such a short time. *The usual period is about three to four days*—sometimes six days. In mud they lived a day or two longer, probably because in this medium they move very slowly, and are consequently exhausted. Although provided with a mouth and a digestive tract, they are still unable to obtain food for themselves.

Leiper, in his experiments done in Africa, found that of all the organisms in the ponds, cyclops alone were capable of infection; and he believes that the mode of entry of the embryo is not through the integument of the cyclops, as usually thought, but by way of the intestine. As regards the completion of metamorphosis, he found that the striated cuticle of the embryo was cast generally on the eighth day. The larva which emerged lost, two days later, a very delicate enveloping pellicle, and from that time onward underwent no further eclysis. The subsequent changes were confined to the differentiation of internal structures, the larvæ probably becoming mature in the fifth week.

The later work has consisted in feeding a monkey on bananas containing cyclops which had been infected for five weeks and which had in them apparently mature larvæ. Six months later a careful post mortem examination of the monkey revealed the presence in the connective tissues of five filariæ which possessed the anatomical five characteristics of *filaria medinensis*. There were three unimpregnated and obviously miniature females about 30 mm. long, and two remarkably small males (22 mm.), which were obtained, one from the psoas muscle, and the other from the connective tissue behind the œsophagus. These results point strongly to the truth of the theory, that infection of man takes place from the drinking of water containing infected cyclops. I remember a case demonstrated by the late Professor Dr. Herrman Nothnagel, of Vienna. There was brought from Manchuria a yellow fellow by the great explorer of Asiatic poles, the late Professor Dr. Herrman von Wambery, to Budapest. He was not three months in Hungary when Dracontiasis broke out on some of his muscles, especially the psoas muscles. Filaria medinensis was discovered by the pathologist of the famous Vienna institution, to have the life-cycle of the parasite completed, the young must be discharged directly into fresh water soon after the parent worm has succeeded in creating a break in the overlying skin, and before the wound has become markedly septic. The embryos must find a cyclops within a few days. They must, moreover, succeed in entering its body cavity. Five weeks later they will have developed into mature lavæ. They must thereafter be taken into the human stomach, and having been set free from their host by the gastric juice, reach the connective tissues by penetrating the great wall. The life cycle of the parasite will, necessarily, be broken by the death of the embryos, either from sepsis while still within the parent worm, or, if after their discharge, by saltish water or drying, or, if cyclopæ are not present in the water, or if the infected cyclops die or are not taken into the human stomach, or if the larvæ, ingested by the final host, are immature or fail to escape from the chitinous sheath of the cyclops. Though they do find their final habitat, the cycle will still be incomplete if there are not both males and females among the matured adults, and if in their wandering the females are not impregnated.

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Fat and Oil as Excipients.—The basis of choice depends upon the wish to penetrate or not to penetrate the skin. Sometimes we wish to treat the epiderm, or to apply a protective. Again, we may desire the therapeutic value to be carried inward by the excipient.

Unna, years ago, advised the routine use of "unguentum aquæ rosæ" as an excipient when the deeper parts are to be reached.

The fixed oils and fats used by us: lard, lanolin, mutton suet, and olive oil, are combinations of olein, stearin and margarin. These are the oleate, stearate, and margarate of glycerin, which is a triatomic alcohol.

The olein gives fluidity to the oil (or fat). The stearin gives it solidity. Lanolin is a cholesterin fat, resisting saponification and any tendency to rancidity. It is neutral as a base, for prescriptions, and readily penetrates the skin.

Wood complains that lanolin, as a product to be excreted, will or should not be expected to act well as an excipient of medicine to be absorbed. He gives contrary studies, and shows that the weight of experience is in favor of the use of lanolin. Adeps lanæ anhydrosus (anhydrous wool fat) is best of all for skins irritable to water, as in the eczematous conditions. Oil of sweet almonds, a vegetable fat, is used in cold cream, and offsets the impermeability of the wax.

Butter is "olein, palmitin, together with other fats and oils" (Eliot). But butter becomes rancid too readily, for use as a medical excipient, unless it is to be used quickly.

Cerates, used for compounding ointments, are of lard, 70 parts, and white wax, 30 parts. These are firmer, but less absorbable. On the other hand, this difference increases the protective properties of the formula containing ceratum as an excipient.

Petrolatum, a mineral oil, deserves a paragraph to itself. It is derived from paraffin, of the methane, CH_4, series. Petrolatum does not become rancid, and is absolutely free from irritating properties. It mixes readily with the alkaloids and the phenol group, but according to some authorities (Potter) does not penetrate quite as readily as animal fats. This difference gives some character of a protective as well as a vehicle.

Dermatologists experience much difficulty in choosing excipients, especially in cases of eczema.

We have then several groups of excipients:

1. The Petrolatum, or mineral variety.
2. Lard, and lanolin, of animal origin.
3. Olive oil, sweet almond oil, of vegetable origin.
4. Wax, and cerates.

When to combine, and when to single out among these?

In acute eczema, mild applications are needed, and Schamberg advises boric acid in cold cream, using then oil of sweet almonds. He also uses diachylon paste (Hebra), which has as its base a vegetable oil, namely olive oil. Lassar's paste, which calls for petrolatum as a base, extends the field to include mineral oils. So far, no fats of animal origin have been named. In acute eczema the question of osmosis is very important. The surface tension has been changed and new values created. Duhring, Schamberg, Brown, and writers generally, unite in saying that the surface should be so treated as to restore normal tension and the proper function of physiologic osmosis; this is what, in effect, their advice indicates.

Schamberg, in squamous eczema, employs a formula with lanolin and petrolatum in it. The cholesterin, as we have seen, is most valuable, in being of kin to normal constituents of the epiderm and which are diminished now, or wanting.

In chronic eczema there is less need of fats, and a glycogelatin (Unna) is substituted. Or tar is employed.

Duhring, especially, says that the rule of Hughes Bennett holds: use salves in dry eczema, and lotions in moist cases. Some acute eczemas may interdict any fat or oil. Lycopodium, which absorbs half its weight of water, and none of oil, is recommended. Starch is inferior, viewed as an absorbent. Magnesium carbonate is very absorbent. Duhring says that "cimolite," white fuller's-earth, is excellent. Lard, fat and oil alike are contra-indicated, at this time. Glycerin in acute cases must be prescribed with caution. Olive oil is a non-drying, and linseed a drying character, while cotton-seed oil is intermediate; so that pure olive oil should be demanded, and not the cotton-seed substitute when these characteristics are pivotal. Duhring tells of lard and lime water, which may be shaken together, even as olive oil and lime water, to form a fluid application. The choice will depend upon the need for or objection to absorbing water from the cutaneous structures.

In acute eczemas, according to Duhring, the petrolatum series should not be used singly. Even lard may prove irritating. Use unguentum aquæ rosæ (Unna, Duhring, Schamberg).

Zinc oleate in benzoinated lard is valuable (Shoemaker and Crocker). Duhring' refers to Shoemaker's book: Ointments and Oleates, especially in Diseases of the Skin. Philadelphia, 1890.

In eczema rubrum of the infantile type a petroleum base is helpful.

A paste may be better, even in acute eczema.

Petroleum and lanolin together form the basis of these drier mixtures.

Citrine ointment should prove helpful, but not rubbed down with lard. Use olive oil, or oil of sweet almond.

Glycerin and boric acid may be ordered for chronic irritable erythematous eczema. Duckworth and Hardaway use glycerin as a base in treatment of this condition at the nares in the aged (Duhring).

Vulvar eczema should be treated with hydrogen dioxid (Piffard), avoiding pastes or ointments. The reflex causation is one which renders a different mode necessary to antagonize the altered states of aggregation in the tissues. So that applications, in the absence of internal treatment, are commonly futile.

Tar ointment, one part to three of vaseline, is recommended by Duhring for chronic and obstinate eczema rubrum; the formula, as a base, may have added a half a drachm of calomel. Simple ointment may be used as a base for prescriptions in the ailment, especially upon palmar surfaces.

So that throughout this section of treatment, as in others, the choice depends upon the nature of the histopathologic change, and the conditions to be overcome.

The value of the mineral series may lie in their power to reduce friction without being assimilated by the proteid material. Vegetable oils are similar to the mineral series in their value to reduce friction; they also have a nutritive and heat value, so that this, to a measure, will antagonize the friction-reducing factor, by stimulating the evolution of heat. In the animal oils and fats we stimulate the natural production of fat, by the presence of similarity and the force of adhesion—abstracting, thereby, the fat present, and provoking secretion.

For nitrogenous metabolism, as repeatedly shown, some fat, to evolve heat, must be utilized. When distinct changes in the dermal formula are present an ointment as a skin food may be helpful. The recognition of this and kindred indications calls for study of the deepest sort.

A Step Ahead in Medical Education.—The Medical Society of the County of Erie, at its April meeting, instructed its delegates to the State Society to urge action in regard to raising the standard of medical education in two particulars: 1. The matriculation requirement of one year in college. 2. The addition of a fifth year of medical study in a hospital.

This action is well entitled a step since the delegates must secure a similar resolution of the State Society addressed to the Regents, who, in turn, may, if so disposed, request the legislature to amend the existing law, and the legislature may, if it so pleases, pass a law embracing the recommended reform, subject to the approval of the governor. As to the second desideratum, the Regents are to be requested merely to investigate the availability of interneships, with reference to the feasibility of legislation.

At each step, there will be ample opportunity for conservative arguments which will prevent hasty action, though, on the other hand, any higher body may act on the hint without waiting for the intermediate steps.

We need not reiterate the position of this journal as favorable to any reasonable advance of requirements to the final licensure in medicine, not simply on the ground of increasing the average ability of the profession but for economic reasons based on the relative excess of physicians. The latter reason is by no means merely a selfish altruism, having in view the greater comfort of our fellow practitioners, but a recognition of the fact that the usefulness of the average physician is curtailed by the present struggle to earn a living. It is not only a matter of better instruments, more books, more independence for post graduate study of one kind or another but less temptation to various unethical practices, all of which

ultimately and some of which directly harm the patient, and a diversion of mental vigor into channels of thought of how to help the patient instead of how to pay bills.

We are pleased to note also, that this first step mentioned, originated in the Medical Department of the University of Buffalo. Medical schools have been accused of antagonizing medical education laws, and of desiring to keep the requirements of matriculation low, in order to secure more fees from students. Perhaps twenty years ago, there was some truth in this accusation, but there has been a rapid change in the last decade and the motto of medical schools, both as to the student body of each school and as to the schools in the aggregate, is now, "Quality, not Quantity."

The University of Buffalo is not an endowed school nor is it so constituted that it can increase its requirements without sacrifice and effort. Nor is it, except in anticipation, possessed of a collegiate department, so that a requirement of collegiate work will balance loss in one department by gain in another. Some of the richer medical schools of the country could require a full collegiate matriculation standard with far less sacrifice. We trust that this example will be generally followed by medical schools and that the day is not far off when we shall look to educational institutions in medicines to set the highest practical standards in medical education and when it will seem absurd to assume, as has been done in the past, that these standards must be forced on the schools.

Gold as a Medicament in Disease.—Gold is very useful in the care of ailments. However, when Potter advises the treatment of Hypochondriasis by small doses, it is not gold to be used in the sense of adjuvant measures, valuable as such a use may be. Colloids, introduced so generally in Europe, include colloids of gold. For a long time gold salts have been favorites in the asthenias of post-alcoholic states. Gold has been administered for irritative dyspepsia, gastro-duodenal catarrh, hepatic and renal sclerosis, hypochondriasis, amenorrhea, impotence, syphilis, carcimona, retinitis of renal syndromes, and as a general tonic.

Jesset, in 1894, made up tablets of Chian turpentine, auric chlorid, and sulfur, which he used locally to cleanse very severe cases of uterine cancer, giving arsenic bromid internally. This local employment of gold is parallel to the gold in kataphoresis (?). If so, it is partly a similarity of kind, and partly of degree, for the penetration is of some sort or results would not be attributable to the agent. Gold, deeply introduced, as in kataphoresis, acts as a tonic, stimulant, irritant and solvent, as an alterative, in other words. It is similar to the mercurials in effect, in large doses. Like the mercurials, it is opposed in acute intoxication by albumen, or flour.

Culberson, in 1894, gives an account of relief of amarosis due to uremia. He used a salt of gold internally (Am. Jour. of Ophthalm., July, 1894). He speaks of the bichlorid of gold. As only the monochlorid and the trichlorid are recognized, it is probable that he means the mixture of chlorid of gold and of sodium.

This latter remedy is noted in the treatment of Tuberculosis, by Pepper (Univ. Med. Magaz., Pennsylvania, Dec., 1895). Strychnine and atropin were also used, and bacilli disappeared from the sputum. After an attack of pneumonia a reappearance, followed by successful administration of the same treatment resulted in an apparent cure.

Brower, in 1898, reports the positive value of gold in cases of sclerosis. It is helpful, therefore, he adds, in cirrhosis of the liver, interstitial nephritis, arteriosclerosis, and sclerosis of the central nervous system. It is valuable in syphilitic conditions. This is borne out by Potter in 1903, who summarizes it as valuable in syphilis when there are tertiary ulcerations, and syphilomata of the bones, and when other treatment has proven ineffectual. Triturations of the metal, itself, may be ordered. Gold chlorid is useful, too. Brower continues, advising the chlorids of gold and of sodium, in diabetes mellitus, tuberculosis, and functional nervous disorders (Jour. Am. Med. Asso., Oct. 24, 1898).

Gold-miner's consumption is described by Oliver (1902, Lancet, June 14, p. 1677). Two other observers unite in describing this wasting disease. No tubercle bacilli are found. Indeed, the sweating and wasting are similar to the symptoms of chronic gold intoxication.

Auric fever, as described by Potter, is due to the chronic impoisoning by gold. We find nausea and vomiting, glandular irritation, salivation without loosening of the teeth (no sore gums), increased urine, hyperidrosis, and pyrexia. Nutrition is impaired (wasting and malnutrition) and general malaise. Acute intoxication displays acute gastro-enteritis, a psychosis, or mania, convulsions, priapism, trembling, and paralysis.

Wood says that the general effect of salts of gold is to produce fulness and frequency of the pulse (does this mean low tension?), and to augment the urine and the insensible perspiration without interfering with the appetite or the regular movements of the bowels. Toxic doses cause inflammation, seizing upon some special organ, or organs, according to the individual's idiosyncrasy. It is believed to act upon the metabolism of the nervous system.

In the pharmacology of gold we find the simple trituration (dry) of the chlorid of gold and the chlorid of sodium the forms commonest employed. Bromid of gold, arsenic, and sodium is a formula used in epilepsy. The chlorid of gold may be administered singly. From one milligram to six milligrams may be taken at one time, with safety, according to Potter. H. C. Wood says the moral effect of hypodermic doses is often the most observable of its effects. Wood gives as much as sixteen milligrams, or a quarter of a grain at one dose.

What value has gold, so given? The newer writers, in the fields of kataphoresis, ascribe much to platinum and to gold. Colloidal forms of silver, platinum or gold are extensively advertised in Europe. There are many clinicians reporting cases which seem to benefit through treatment by gold. It is not thoroughly tried out, as yet.

Status of the Human Race.—In a company the other night it became a subject of discussion whether the conditions of life in which we are, signify a state of secure and advancing social order or whether the biologic equation is one of predicament. What do

our various occupations imply? Do our houses mean a weakening of physical vigor? As the shells of oysters, who cannot move so freely from one location to another. Do our procreative powers, with their vast waste of spermatozoa imply a difficulty of preservation of the species, which may increase, at an expense to the race which will endanger our future? As with fish, whose spawn serves to show the devastation of enemies.

Are our methods of food-supply those of a race or species which is not secure? We live with greater insistance upon the eggs of chickens, fowl we have to care for and guard. The milk of cows and their fats as butter, the grain of wheat and oats, and the flesh of lamb and beef. This necessity in its parasitism, implies a dependence which may or may not signify weakness, or the possibility of being weakened or injured. Biologically, the future of the species depends upon whether the adventitious factors, as clothing, food-dependence, domiciles and family imitation, represent helpful elements, or are tokens of weakening which point to the decadence of power in the individual. Are these weaknesses a part of the current setting forward, to produce special types of mind? Or, would the highest order of mind develop in other environment? Is it possible that a vast civilization lies under the sea, and in the past? Or do we occupy a *primum locum* in the biologic scale?

There is something pathetic—more than that, epic—in a sweeping view of what we are and do. Birth, and a long period of feebleness, and one of preparation, followed by a brief, often too brief, although brilliant apogee. Episodic to this comes marriage. A day of labor, and an interval of companionship, and a sleep together. Then renews the struggle and the tumult. So difficult is it to trace through this whether it is the fulfilling of one mind in another, or the perfection of separate individuals by antithesis, emulation and stimulation. What, in other words, is the relation of biology to psychology in the union of two lives? And what does this mean in the formula of the epoch of the species?

If we were to approach, from a distance, some new species presenting characteristics as strange as our own, what would we say to the needs, wishes and efforts they would show?

Would such dependence and requirements indicate vigor and possibility, or a struggle to maintain and to exist? Can we, by any process of reasoning, determine if we are in a period of advance, or check? In the geologic eras when trilobites, when mollusks, or when saurians held sway upon the earth there was a period of great flourishing succeeded by a period in which they diminished, and lived with greater effort. What do our fights in the pathologic arena signify? Are we menaced by these very minute creatures to such an extent as to endanger the succession of the species? The occurrence of post-partum sepsis is a sign of the times. It is a direct blow. This condition of danger is, for the present, lessened.

But what would we say if one animal were attacked by another at the very moment of bearing young, by hords of enemies, as we are by streptococci in the metritic sepsis and the allied infections? These attacks are real, even if not purposive, and imply that the life and procreation, the vital arena of the streptococcus, is antagonistic and clashes with that of our puerperal species. This is a dangerous and thrilling state of affairs. Its analog in other species would call forth comment.

What is most important is this: Are such attacks the ebb or the flood tide? Has our mind vanquished large beasts and is it now facing a hord of minute and habile enemies which is the advance guard of conditions which will sweep us finally from the earth? Or are we to rid the earth of them as some residue of past adverse conditions? Does the husbanding of resource imply a vague or instinctive appreciation of danger? We do not kill off our cows, our chickens? Do we realize the tenuous nature of our hold upon the citadel?

Such questions multiply.

Acute Inflammation of Long Bones.—R. G. Le Conte (Bost. Med. and Surg. Jour., June 1, 1911), from a study of sixty cases finds that the mortality and the extent of the necroses following acute inflammation of bone depend not only on the promptness of surgical interference, but also on its thoroughness. Suppuration beneath the periosteum does not exclude an infection of the medulla, the presumption being that after three days the medullary cavity is also involved. Within seventy-two hours of the onset of the disease osteoperiostitis is localized usually in the cortex of the bone; and incision, disinfection and drainage are sufficient to bring about a cure. If there is no marked diminution of the symptoms in twenty-four hours after drainage, the medullary canal should be opened; should it then be found healthy, the dangers from infecting it are slight. In most of Le Conte's cases osteomyelitis was due to a neglected osteoperiostitis. In operations after the third day, when systemic symptoms are pronounced, the medullary cavity should always be opened; and the opening should be sufficiently long to expose healthy marrow, and sufficiently broad and long to expose healthy bone. The mortality of ten per cent. was due directly to delay in operations, and to insufficient surgery at the primary operation. In five of the cases studied Le Conte found the surgery at fault; and had a radical operation been done all the patients, in his opinion, would have recovered. In one case the delay in operation was perhaps more responsible for the fatal termination than the surgery.

The Society for Psychical Research has a rival organization in the International Club for Psychical Research, which has been founded by Mrs. Annie Besant. The latter's headquarters are in the very materialistic precinct of Piccadilly Circus; nevertheless every encouragement is to be given spirits to communicate with the psychical researchers working there. Arrangements have been made for the development of promising mediums; and there are appliances and apparatus "for the study of the physical effects of mediumship and other kindred subjects. Here also are special rooms for rapping manifestations, with tables so constructed that even the youngest and most inexperienced spook could rap lightly upon them with every prospect of receiving immediate attention. Among the members is W. T. Stead, who has been so frequently humbugged that he surely, by this time, should know better.

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CO-PARTNERSHIP IN SANITATION.

CITIES and towns are perfectly well able to attend each to its own sanitation. But villages and hamlets may perhaps be handicapped in this regard by reason of insufficient funds. Nor indeed will any small community need all the time an elaborate sanitary outfit; such might lie idle a good part of the year. In these circumstances it were altogether feasible for several adjacent communities to pool their resources. For example, a single hamlet might find a fumigating apparatus beyond its means; yet one of these, though, like a fire engine seldom wanted, would on occasion be very badly wanted indeed. Nor would it seem fair, when any one little community, more enterprising than its neighbors, should be owning such a plant, that others should be constantly asking the loan of it.

Thus it is pointed out by Flick, mutual advantage and economy can be realized by the combined ownership of several things essential to modern sanitation. For example: There can be a communal dispensary for the treatment of the poor, especially for sufferers from consumption, incipient consumptives would thus be immensely benefited; for it is difficult for them to secure entrance into county or State sanatoria for incipients, since most of these institutions have long waiting lists. Any young physician would gladly serve without charge in such a dispensary, so long as he is assured the cases enjoying its advantages are really without support. Besides simply treating these patients he could teach them the hygienic life; and by such means a great deal of sanitary information would percolate through the community. A dispensary of this sort doesn't necessarily have to be built; any existing two-roomed structure could be properly fitted up at very small cost.

Next, several communities might have their communal hospital for advanced consumptives. There is nothing more important than this latter; for the advanced consumptive, helpless as he is to take care of himself, is a very dynamite factory in the dissemination of the tuberculosis germs; he contaminates his bedding, his clothing and everything about him with his germ-laden spittle. But if two hospitals, one for infections in general and another for advanced consumptives, cannot be provided, all these cases can be taken care of in one building, being sure only that the part devoted to consumptives is isolated and separate from the rest of the building. Of course it were best to build a hospital; but lacking the means for this any ordinary dwelling house can be fitted up for the purpose. Such a building should be simply constructed and plainly equipped; there is no occasion for making it elaborate and ornamented. In point of fact, such interiors should be quite plain, so that easy and thorough cleansing may be assured. No superfluous trimmings or bric-a-brac are wanted in a hospital; these adornments only harbor germs.

And it were well if the dispensary for ambulant cases could be adjacent to this hospital; for then the physicians and nurses of either could work in both. There would of course be nurses in the hospital, at least; in addition to which the communal partnership could hire a visiting nurse, who would be of immense benefit among the poor and the ignorant. These nurses, under the guidance and tuition of the physicians, would attain such practical knowledge and experience as could not otherwise be possible.

Then this communal hospital could be fitted with its sterilizing outfit; and a plant for disinfecting and washing clothing, bedding and various utensils taken from any sick room in the community in a case of infection. Besides this several communities could combine in the purchase of a joint disinfecting and fumigating outfit; so that immediately after a death or the removal of a case of infectious disease from any dwelling, it could at once be rendered germ-free, by which simple means other lives will not be jeopardized. Of course such matters as sputum examinations or blood tests would as usual be referred to the county bacteriologist or to the State Department of Health, except in cases where physicians and patients prefer to arrange for such examinations in private laboratories. It is especially in the fumigation of houses that difficulty arises, by reason that some consider this process troublesome and costly; it certainly is both of these when, by neglect of this essential measure, much unnecessary sickness and perhaps occasionless death occurs. But the cost can be minimized in the way here indicated; and once incurred, need not for years be made again.

There are some communities so small that they do not have health boards or health officers; and here it is difficult to bring legal action to bear. But when this is lacking moral pressure will generally bring about the salutary result, if only the inhabitants can grasp the feasibility of arranging for the means to be employed. In such communities sanitary affairs transpire from time to time which need not be made county or State matters, but which several communities can combine to arrange for themselves, to their great mutual advantage. In these circumstances the inhabitants will soon become sufficiently alive to the danger of infection; and will refuse to live in contaminated houses, until they have been purified and until a clean bill of health can be shown. And to this end disinfection should be easily insured by a portable apparatus that can be transferred as needed from place to place. In very small communities compulsory registration of tuberculosis and other infectious cases, being a government function, is difficult of attainment; however, through the dispensaries and hospitals, to which the sick will resort, it will be possible gradually to get a fairly complete census of cases and of infected houses.

STERILIZATION OF HABITUAL CRIMINALS—IS HEREDITY A MYTH?

OUR attention has been again called to the matter of heredity by an argument against the sterilization of habitual criminals by Charles E. Nammack. (Medical Record, Feb. 11, 1911.) Let us state at the outset that we are by no means committed to the policy of castration of criminals as a legal penalty, or rather as a legal means of protecting society. Absolute prevention of procreation is so closely in analogy with actual destruction of human life, that we hesitate to take a radical stand in the matter, on precisely the same ethical grounds that we would hesitate to vote for the establishment of capital punishment in a community in which it did not exist, or for war.

Dr. Nammack, however, bases his argument, not on an ethical or religious scruple, but on a direct denial of the influence of heredity and, in this regard, we can certainly take issue with him. "The oft-quoted comparison between the unfortunate Jukes family and the talented Jonathan Edwards family" is dealt with by ascribing everything to the influence of environment. At the same time, the influence of purely physical weakness upon heredity, is conceded.

We question very much whether absolutely scientific experiments with hybrid plants and mice, etc., can throw much light on the practical problems of human heredity. For various reasons, some essentially practical, as the development of muscle, yield of milk, growth of wool, etc., others absolutely puerile, as the length and curl of tail, color of the muzzle, shape of the jaw, etc., pure breeds of animals have a greater value than mongrels. For the human being, especially in a state of civilization, physical peculiarities are of comparatively little importance, while mental, including moral characteristics, are of paramount importance. Even stature, form, musculature, etc., are of minor importance, provided that the general health is good.

Whether desirable mental traits depend upon heredity, or upon environment, in paramount degree, can be determined only by systematic, impartial study of human beings, carried on for several generations, on a large scale. No sensible person questions for a moment but that environment can, both in a physical and a mental sense, offset any possible hereditary influence, at least so far as the actual career of many individuals is concerned. Put into execution the time-honored plot of an exchange of a Jukes and an Edwards baby, from one cradle to another, and the chances are that, without some great temptation, the Jukes child would live a reputable life and that, unless rescued from the influence of thieves, thugs and strumpets, the Edwards child would turn out badly.

It is very rarely that statistics can be gathered for a series of generations, of a criminal family. One might as well attempt to write the genealogy of the descendents of a stray cat or dog. But, excepting its rather unusual addictions to educational and professional lines of life work and the signal success of many of its members, any one of a couple of hundred of Yankee families might be substituted for the Edwardses. Is it environment that gives substantially the same results for such families, from the seventeenth to the twentieth century; environment that carries the school house, church and legal machinery from New England, into the forests of New York, and on through Ohio, Michigan, Indiana, Illinois to the plains beyond the Mississippi and over the Rockies to the Pacific coast; environment that keeps essentially the same type of intelligent, honest, God-fearing, school-building man as pioneer, farmer, merchant, student, professional practitioner, developer of mineral resources in all sorts of climates amid the most divergent scenery, whether in country, village or city? We do not quibble as to the meaning of the word environment. It means early training and education more than scenery or historic date. But every move relieves the youth from home influences, indeed, the growth of our country has been due not so much to outcrowding nor to influx of European immigration, as to the longing to be free from the literal restrictions of environment. In spite of this yearning for lack of restraint, why does one

boy leave the farm for the great city and gravitate naturally to the "haoks" while another takes his place immediately as a respectable citizen? Why does one immigrant seek the mines, another a western farm, another the most crowded, unwholesome and morally tainted slums?

It cannot be questioned that heredity influences the environment that a man creates for himself, nor, on the other hand, that environment gradually becomes a hereditary habit. No better illustration could be adduced than the Jewish race. As we know them through the Bible, they were mainly farmers and stock raisers. To-day, as the result of generations of enforced environment and limitation to certain trades, a Jewish farmer would be a curiosity.

It is too early to base an argument on statistics of heredity and, in this country, we are prejudiced in favor of the view that a man is what he makes himself. We see some bare-footed, unschooled boy rising to eminence, like Lincoln, for example, and we forget that the log-cabin in which he was born represented only an episode of a generation or two in his family. Or, we go to the opposite extreme, become snobbish and imagine that there has been no aristocracy aside from a titled class. If we use our eyes and get at actual facts, we shall be able to understand why the same names occur in lists of Governors and other political rulers, in educational and professional and commercial life, why young men with almost limitless wealth or with the highest institutional education or with both, flat out and become failures or worse; why certain "American" girls—and we believe that most such come from very tranciently American families—are attracted by the glitter of a title. In other words, with due regard to inevitable exceptions, we believe that the family rather than the individual is the unit, and that heredity is a force that must be reckoned with.

There is one more word to be said as to the posterity of habitual criminals—and let it not be forgotten that neither side in the controversy regarding sterilization alludes to the circumstantial criminal, due to an accidental temptation, emotional stress, etc. Let us grant for the sake of argument that a habitual criminal is, himself, the result of environment, of family training rather than essential family tendencies, and that his offspring may, with proper environment and training, become a good citizen, able further to bring up good citizens as his descendents. By what process are the habitual criminal's children to be assured of the proper environment? Is society to stand ready to snatch each successive child from the cradle at the proper moment? And what disposition is society to make of these children? At the best, such offspring is in the position of an orphan, with all the orphan's handicap in life.

One more thought.—Have you ever considered how much of your comfort and success in life has been due to the guidance of parents, perhaps to honest pride in them, and their parents and forebears, not necessarily because any of your ancestors bore a title or made a name in history, but because, for generation back of generation, they were honest, upright, moral, high-minded men and women? Grant that the descendent of thieves, murderers and prostitutes has eyes of the same color, no abnormality of external ears, no receding chin or forehead, no actual tendency to crime nor inability to learn, is he not handicapped, never-the-less?

DOCTOR OLIVER GOLDSMITH.

GOLDSMITH was the Benjamin of the large family of eighteenth century English litterateurs, of whom Dryden was the Jacob and Pope the Judah. Mr. F. F. Moore, in his delightful *Life of Oliver Goldsmith,** well observes that we venerate Dryden, we admire Pope, we esteem Young, we quote Gray, we neglect Thompson, we ignore Johnson, we tolerate Cowper, but we love Goldsmith. And such affection is peculiarly appropriate in medical men, for Goldsmith studied "physick," and practiced it—a little.

One of the most prominent characteristics of the world is worldliness; but Oliver's clergyman father taught the opposite—that it is more blessed to give than to receive; and Oliver for his part, throughout his life, lived up to this lesson, and gave ever and without stint of his heart and hand and of the fruits of his kindly genius. As a result he was almost always penniless, frequently starved and generally ill-clad.

By the help of relatives this genial Irish boy, of insignifiant form and face pitted by the smallpox, but of great proficiency on the flute—a fortunate accomplishment, as it turned out—was sent to the university; he was forced to go thence as a sizar, and his college years were the unhappiest of his life. His sister had clandestinely married a young man to whom his elder brother Henry was a tutor; the husband's family made no objections, but the sensitively proud father of Oliver insisted on assigning to his daughter a dowry of four hundred pounds (two years of his salary) and the young husband's wealthy family made no scruple about taking it. In consequence poor, acutely sensitive Oliver was compelled, with the other sizars, to wear the gown and cap of a servitor and to perform the duties of a housemaid upstairs, and those of a scullion in the fellows' hall. The high spirited collegians upon whom he waited scorned all work that was not "fit for a

*E. P. Dutton & Co.

gentleman," sneered at all professions except arms and the Church, looked upon an attorney as of an inferior race and (we blush to relate) put a physician on the same level with a horse dealer. And, quite as we have various grades of eggs, such as strictly fresh eggs, new laid eggs, fresh eggs and just eggs; so there were then even grades of gentlemen, such as "a gentleman to the backbone," "a real gentleman" and just "a gentleman."

An uncle continually contributed to his scanty expenses, else he must have been absolutely destitute; but when his father died, during his college course, he helped to keep himself in funds by writing ballads, at five shillings each, to be hawked about the town by street singers. Nevertheless, despite his own sufferings, he played providence to others, borrowed from some to lend when his own slender means failed; a truly Goldsmithian incident was the giving away of his bedclothes to a poor woman, after which he cut open his bed and made an unsatisfactory nest for himself among the feathers. Such habits finally strangled this great and most lovable genius, after dragging him from time to time to the bottom depths of misery and humiliation; he died in penury at the age of 46, when he was actually earning not only more money than any man who lived by literature in his day, but sums which no writer of the present day need scorn.

On completing his college career his family council decided upon his entering the Church; but when to this end he presented himself before the Bishop in scarlet breeches, he was rejected, no doubt to his great relief. Next it was decided he should follow the Law, and the adorable uncle we have just mentioned provided fifty guineas to qualify him to starve as a barrister; he promptly gambled away the money, was forgiven, and for a third venture visited Edinburgh with the idea of "going to be a doctor." He was equally unfitted for this profession as any one of judgment should have perceived. Nevertheless there is much that it most interesting, told of Goldsmith during his two years in Edinburgh; we learn something even about his medical studies. One characteristic he had which is excellent in a physician; he was a very good observer and had a notable ability for ascertaining important minutiæ in the personality and character of the people with whom he came in contact. He might have made a first-rate diagnostician. At the end of these two years he wrote to that precious uncle, explaining that if he had just a little more money he might pursue his medical studies to still better advantage in Paris and Leyden; the means being provided him he spent about a year in Leyden, gradually neglecting his studies more and more for such congenial pursuits as card playing.

After some years of vagabondage in Europe (which produced at least one blessing, the immortal poem "The Traveller") Oliver returned to England in abject poverty, and for years struggled to keep from starving. He tried to exercise his profession, having secured his degree from Padua; but besides other obvious disadvantages, he had not "the humbugging qualifications so requisite in those days." (Oh Mr. Moore!) Space permits no further appreciation of our kindly-natured colleague; for our profession may well claim him and be proud of him. The world might lose thousands of works, and not greatly miss them; but to lose "The Traveller," "The Deserted Village," "The Vicar of Wakefield" and "She stoops to Conquer" would be an irreperable calamity. Anyway, "there was never a bit of harm" (except to himself) in "Poor Noll, who wrote like an angel and talked like Poor Poll."

JOSEPH, BARON LISTER.

THE wonders of modern surgery are best appreciated when one notes in the byways of medical history that Sir Ashley Cooper (perhaps the greatest surgeon of a century ago) hesitated to remove a wen from the august scalp of the Fourth George, fearing a fatal issue from the possible development of an erysipelas. The marvelous contrast was achieved by the twin sisters anesthesia and antisepsis. For the introduction of the latter the gratitude of mankind is due Joseph Lister, who established the principles upon which wound infection is now prevented.

Pasteur had formulated the germ theory; he had proved that when infusoria and bacteria gained access to blood and lymph, infection was the result. At about that time carbolic acid had been discovered; and Lister used it as a germicide. And this was the beginning of surgery in the modern sense. Lister, his ideas slow of adoption by the medical profession, having to fight scepticism and conservatism, his statements received with an indulgent smile, had again and again to set forth the value and the necessity of antisepsis in surgery. Graduated in medicine in 1852, and occupying from 1869 to 1877 the chair of Clinical Surgery in the University of Edinburgh, he made in those years special study of histology and bacteriology. He concluded that contagion was conveyed into wounds through the air (and also through clothing, dressings, sponges and instruments), thus causing putrefactive changes in the blood. Pasteur and Tyndall had before shown that it was not to its oxygen or any other gaseous constituent that the air owed this malign property of infection; but to minute "particulates" suspended in it. Even in 1867 Lister was guarded in expressing his opinion as to the nature of these infectious particles suspended in the air; but with Pasteur he soon thereafter became convinced that they were "living organ-

isms," circulating with the dust. He then devoted his great genius to the practical application of this finding to surgery.

He experimented first in the treatment of compound fractures, having been convinced that the enormous fatality resulting from them was largely due to the entrance of the infected air, and he conceived the problem to lay in protecting the region of the wound from the offending atmosphere. To this end, then, he first cleansed the wound with carbolic acid, and then dressed it with lint soaked in this substance. The great success he achieved led to this procedure in all flesh wounds, in abscesses, and in operations involving the cutting of the skin. Next, finding carbolic acid poisonous when distributed over large wound areas, he prepared in its stead "Lister's Antiseptic Putty," of linseed oil, carbonate of lime and carbolic acid.

The effects of the new treatment were at once beneficial, and in the highest degree. Wards that were the most unhealthful spots in nature, reeking as they did with erysipelas, gangrene and hospital fever, were turned into models of cleanliness and salubrity. And yet Lister had to fight hard to get his teachings accepted; he found much greater success among German and American surgeons, less in England, and least of all in his own University of Edinburgh; and it took eight years of precept and example in that Scotch temple of disbelief to get his views accepted and followed—"after a fashion."

Thus to the initiative work of Lister is due immeasurable saving of life, incomparable relief of suffering, the opening of new surgical fields: instead of fear about the removal of a wen, the thorax, the abdomen, the cranium, the lungs, the heart, the intestines, the brain—organs before inspected only on the post-mortem table, are now freely and safely opened by the surgeon.

The seventh decade of the nineteenth century was indeed an epoch-making one; the profession had to reform itself, to change its course, to proceed along new lines. Old ideas had to give place to new, old habits had to be discarded, new ones to become established. Uncertainty gave way to material, demonstrated facts. New methods had to be adopted and pressed for general acceptance. The old, stained, rusty instruments had to be replaced by those of an aseptic type. The surgeon had to get rid not only of visible dirt but also of microscopic dirt that could not be discovered by the naked eye. The whole of surgery, and for that matter too, of medical practice, had to be revolutionized upon a hygienic basis. What this change means may be realized from the instance that in 1860 the whole of Bellevue Hospital had but one bathroom.

Lister was made a baronet in 1883 and was raised to the peerage in 1897. These be great honors, without question; but still greater than any other title, and that which future generations will cherish when others are forgotten, will be—Joseph Lister, the Father of Antiseptic Surgery.

OUR FASCINATING PRISONS.

M. SCHRAMECK, director of the French penitentiaries, and one of the five delegates who attended the recent Congress on Prisons at Washington, returned to Paris "astounded; we saw prisoners in the United States better lodged and better fed than the greater part of the working population of France. I do not exaggerate. They have three meals a day and meat at each; after eating they have coffee. They have to work, but so little that it is not worth mentioning." In America, where freedom is indigenous to the soil, deprivation of that state is considered sufficient penalty, observes the excellent director. An American prisoner, like his early Roman prototype, remains a citizen, and so cannot be flogged. His hair is not now cropped, as in France; nor is he obliged to wear a special costume. Being presumed to preserve the sediment of his own individuality, of his own personality, he sits at meal on his own stool; whilst in France his congeners must sit on forms. He receives instruction in many things, including such sports as football. Amusements, we hasten to add, are also provided, as when a comic opera was recently performed in a southern prison; possibly, however, the authorities employed this as a fitting substitute for the mediaeval tortures that are barred by modern civilization.

Our prisoners are looked upon as wanderers from the right road, who may by kindly methods be induced to return to it from devious byways. Our prisons are models; but too expensive for France to imitate. One finds pity indeed that sundry among our fellow-citizens cannot be induced to avail themselves of such charming accomodations, without the expense, time and incertitude which characterize legal formalities to this end.

M. Schrameck finds most admirable, as they certainly are, our measures to prevent criminality—our children's courts, parks for childrens' play, the care taken to rescue our children from the street and its insidious temptations, to prevent the first petty crime, so that the adolescent may not slide down the evil slope. "To prevent is better than to punish; there is much to be done among us (in France) in this direction." The Director asks, however (and many an American may well consider the question), whether our excessive humanity gives the desired results. "That has to be found out. I do not think that in France such humanity would have much success." Possibly this question is related to the extreme lawlessness now obtaining in the United States.

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We have before us the last volume of the series of this great work, with a full general index which may be had bound separately for an additional dollar. Subscribers may also have on request free of expense "Carter contents labels to paste on the backs of their volumes," to facilitate reference.

We want to congratulate the editors and the publishers upon the completion and the meritorious character of their work, and the promptness and generosity with which it has been done.

Only those who have been connected with such an undertaking can appreciate the labor involved, and the difficulties to be overcome. The volumes speak for themselves and the one before us is a fitting conclusion.

A full and analytical review of this great work, while well worthy, is hardly necessary, because our readers know, from the volumes they have already studied, the quality and completeness of the work, and they will be anxious to examine the text for themselves. The volumes are composed of one hundred and two articles, written by men considered of the highest eminence in the special branches upon which they treat, and in no other way could we expect to obtain so satisfactory work.

The work is sold only by subscription, and those of our readers who desire, and have not already done so, should subscribe at once.

Joint Tuberculosis. — By Leonard W. Ely, M.D., Consulting Orthopædist to the County Hospital, Denver, Colorado, etc. Illustrated, octavo, pp. 243. $2.50. New York, William Wood & Company, 1911.

The eminent author of this book has worked out this difficult subject to as practical a point as is possible from present knowledge, and he is convinced that in the study of the pathology, corrected by clinical experience, he has found the key to the phenomena of joint tuberculosis, or at least to have laid hold on the thread that will eventually help to unravel the tangle in which the subject is involved.

The text is certainly brought to date, and the work deserves the highest encomium.

An Introduction to Therapeutic Inoculation.—By D. W. Carmalt Jones, M.A., M.D. (oxon.), M. R. C. P. (Lond.), Director of the Department of Bacterio-Therapeutics, Westminster Hospital. 12mo., pp. 171. $1.25. MacMillan & Co., Limited, London, 1911.

This book is divided into two parts under the headings of "Principles" and "Practice" for the purpose of study.

Only those infections of which there has been large experience are considered, and isolated or exceptional cases are rarely mentioned.

Our readers will find this a practical book for clinical use in a subject of growing importance, and one which they will be glad to have for every-day use.

Progressive Medicine.—A quarterly digest of advances, discoveries and improvements in the medical and Surgical Sciences, edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia, etc. June 1, 1911; pp. 397. Lea & Febiger, Philadelphia. Six dollars per annum.

The present volume covers the following subjects: Hernia-Surgery of the Avdomen, exclusive of Hernia-Gynecology—Diseases of the Blood. Diathetic and Metabolic Diseases—Diseases of the Spleen, Thyroid Gland, Nutrition and the Lymphatic System. Ophthalmology—The subject of Exophthalmic Goitre is fully brought to date.

The Blood and Its Third Anatomical Element.—Application of the Microzymian Theory of the living organization to the study of the anatomical and chemical constitution of the blood and to that of the anatomical and physiological causes of the phenomena of its coagulation and of its other spontaneous changes. By A. Bechamp, formerly Professor in the Medical Faculty of Montpelier (France), corresponding member of the Academy of Medicine, etc. Translated from the French by Montague R. Leverson, M.D. (M.A. and Ph.D., Univ. of Gottingen). 438 pages. Cloth, $1.50. Postage, 10 cents. Philadelphia, Pa. Boericke & Tafel, 1911.

The subject of this little book is well described by its title, and it will be of interest to every student in Physiology.

The author was a man of great learning, a discoverer of many important facts, and his writings are well worthy of our study.

The book is commended to our readers.

International Clinics. — A quarterly of illustrated lectures and especially prepared original articles in Medicine and Surgery. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, and others. Vol. II, Twenty-first Series, 1911, $2.00. Philadelphia and London, J. B. Lippincott Company, 1911.

The present volume is especially rich in most valuable matter brought fully to date. It cannot fail to interest the active practitioner in general work.

The publication has our full commendation.

Quackery Paid Better. — The British Medical Journal reports that a quack at a fair near Paris was driving a roaring trade selling nostrums, drawing teeth, doing magic and the like. The letter of the French law is against unqualified practice; though, owing to the indifference of the magistrates it is not strictly carried out. This was, however, a particularly flagrant case; and the police felt compelled to intervene. The quack was therefore accosted by the guardians of the law, taken to a tent at the back of his stand and requested to show his diploma. He exhibited a perfectly authentic degree of M.D. of the University of Paris; but with the urgent entreaty that the gendarmes should say nothing about what they had seen. "For, if the people know that I am a qualified doctor, I shall have no more customers."

CORRESPONDENCE

ROSIN WEED.

To the Editor of the MEDICAL TIMES:

The mention of rosin weed in your June number reminded me of some of its good qualities. The only chewing wax we had when I was a boy was obtained from it. When in bloom the horses and cattle bit off the tops and the exuding juice would harden in a small ball on top, then we picked it off and put it in our mouth until we had sufficient sized ball to chew; there never was, and there never will be any wax to equal it. The boys used to say: "It cleared up the gullet and lights (lungs) mightily."

Prairie hay was the winter food for domestic animals, and this weed was always present and greedily devoured. At that time we never had *"heavy"* (asthmatic) horses, but since it has been eliminated the disease is very common.

What action the fluid extract has I do not know; perhaps, as with sweet gum, its medical property may be eliminated by the process of manufacture.

During the Civil War the soldiers suffering with camp diarrhœa found more relief when chewing the fresh buds and bark from the sweet gum; but this medicinal property was lost in the fluid extract. I believe the benefit and wonderful cures credited to it, was due to the mucilaginous character possessed by the green buds and bark, because I always noted the greatest improvement in the summer diarrhœa of children when their drinking-water was made slightly mucilaginous with gum arabic, as it coats and is soothing to an inflamed mucous membrane.

AMOS SAWYER,

Hillsboro, Ills.

RETROSPECTIVE

Foreign Health Resorts.—The Daily Consular and Trade Reports informs us that above forty millions of dollars are each year expended by visitors from foreign countries (especially the United States) who take the "cure" at the natural mineral spring resorts in western Bohemia, along the Erzgebirge (Ore Mountains). This does not include the sum spent by foreign transients who stop for less than eight days or by those from the various Crown lands. The grand total is well nigh $50,000,000. Some idea of the volume of business transacted at the great Bohemian spas may be deduced from the fact that the railroad office in Marienbad (which has a population of 6,279) receives from outbound passengers for transportation tickets alone, exclusive of baggage receipts, $406,000 annually. The Marienbad post office turns over to the Government after payment of all expenses a net profit of a like amount. These figures can be multiplied by three for Carlsbad. Carlsbad, Marienbad and Franzenbad, the three resorts which depend on their natural mineral springs for cure purposes, pay nearly a million dollars annually in direct taxes, exclusive of the special assessments.

In this relation American Medicine intimates editorially that many of the world-famous physicians practicing at European baths are—well, not as they should be; their diagnoses are oftentimes at fault; the baths are "ridiculous;" and it is urged that patients should be properly labeled before they leave these shores." Diagnosis at health resorts is periodically criticised in severe language, and where there is so much smoke there must be fire. The worst of these resorts would seem to be those which have been assumed to be impeccable if not infallible—the centuries-old "cure-alls" of Europe. Many of these "Bad" physicians have specialized on diagnosis; and their methods are presumed to be the results of centuries of experience backed up with all modern means of examination. Yet there are many bitter complaints of cases wrongly diagnosed. Of course the patients arrive with strange diseases from every part of the world, and it is impossible for any one physician to keep in touch with the local peculiarities of every nook and corner in the globe. Some oversights are inevitable; nevertheless this will not answer all the accusations that universal diseases are not recognized, and that the patient comes away with a very false idea of his conditions and prospects of life. There must be justifiable doubt regarding the statistics published as to the results in certain diseases. The benefit of health resorts is undoubted; but the reasons given by local physicians cannot be reasonably accepted if they do not know what they are treating. A patient with unrecognized cancer may temporarily improve in his general condition, while the disease is progressive. There is a growing impression that suggestion plays a large part in the treatment of these patients; and that a vacation with plenty of distractions would accomplish as much without suggestion. Certainly these two factors will account for the improvement called "cures" without calling in the alleged effects of the waters and baths. The literature put out from certain famous resorts imputes such ridiculous efficacy to the waters as to raise amazement that reputable physicians would sign it; by reason of this and of the mistaken diagnoses, the whole mass of literature loses scientific value. "It has become fashionable to go abroad, and as long as that is the case science cuts no figure in it at all. We seem destined to send a flood of gold abroad every season, and certain parts of Europe actually depend upon the money of 'fool Americans,' who are openly ridiculed for gullibility. In addition to all this, the reports received from returning patients as to the mannerisms of many of the world-famous practitioners of special methods—good for about everything—raise a grave suspicion that there is quackery differing in no respects from the methods of every advertising charlatan in America, who, by the way, secures the same kind of lay indorsement as that given to the 'cures' of the Old World."

Fire Water. This expressive term, states The Red Man (the Journal published by the Carlisle Indian School), originated when the Hudson Bay Trading Company found, in their negotiations with the Indians, that by selling the latter liquor they could more easily be induced to trade their peltries. The first whiskey, or intoxicant of inferior quality, was distilled in England, and brought to America in large barrels; but in transporting it overland it was found more convenient to divide it into small kegs. The traders soon found that by diluting the whiskey with water more furs could be obtained; but in time the Indians learned that good whiskey poured on a fire would cause it to flame up, whilst the diluted sort would quench the

fire. Through this simple experiment the term "fire water" became common among the Indians. A chief who realized the bad effects of whiskey among his people declared it must be distilled from the hearts of wildcats and the tongues of women.

Civilization has of late received many adverse criticisms; we now learn that it is to blame because the mouths of women are becoming less beautiful. Alfred Prala, president of the Royal Miniature Society, states that one seldom sees a perfect feminine mouth nowadays (he herein appears to us to be singularly unobserving—for an artist). "My ideal is the rosebud or Cupid's bow type, which is the only pure type of beauty. It may not show character, but that does not matter. Unluckily woman is developing much character nowadays; and the result will very likely be that she will lose the beauty of her lips. A beautiful mouth is at its best in repose."

Iron.—The inexhaustible literature upon iron is always suggestive. We require iron and exhausting ailments cause anemia, so that this deficiency, at least, may drink of the literature. One question is to be answered: Inorganic iron *is* assimilated. What is the advantage of *alcoholic* solutions of an organic solution? Does alcohol destroy any of the efficiency of organic salts of iron?

Bunge, 1895-6, shows that Glycinski, Hamburger, Schmiedeberg, and F. Voit agree in denying the intestinal assimilation of inorganic iron. Bunge finds iron in the egg as a nucleo-albumen, termed *hematogen*. This substance is richly found in vegetables and poorly in milk.

Why are newly born animals so poorly nourished as to iron? Rabbits contain six times as much iron at birth, as they do three weeks later. Bunge believes that the food, ordinarily, conveys iron enough for any anemic case. A vegetable diet is best. The utility of iron in materia medica is largely a matter of suggestion (!).

Macullum agrees with the tenor of Bunge's work. It is true that iron, as an inorganic compound, may be absorbable in the intestinal mucosa; in small quantities, during the upper segments; in large amounts, by partial precipitation of the alkaline chyme and juices (chyle) and later by residual assimilation. Some of the epithelial elements of the mucosa become impregnated with the mineral, thereby. The subepithelial leucocytes may and do carry a fractional part of this iron-value. The blood-plasma is chiefly the mode of conveyance. Hematogen (organic) is absorbed and goes into the liver. This is deposited as one of the type of chromatin (nuclear). The absorption of fat and of iron is closely connected, and both are yolk constituents. The total daily requirement of human iron, says Robert (1894), is 50 mg. Robert explains that iron is very difficultly derived by us from milk because iron in milk is hard to separate out by the digestive fluids. (Is this due to curding?)

Von Noorden, Hoppe-Seyler, and A. E. Garrod show that chlorosis gives no heightened excretion of iron-content. We cannot speak of an increase of blood destruction, only of a deficient blood construction. Von Noorden therefore criticizes Bunge, who fails to find an increased iron elimination on administration of iron. Bunge looked for iron in the urine. Von Noorden says that iron is only abnormally eliminated in the urine. Rether shows that ethereal sulfates are present in urine of chlorotics only when intestinal putrefaction is a complication. Von Noorden concludes by saying that iron salts circulating in the blood as therapeutic agents act as stimulants and irritants to the hematopoietic tissues. The iron-values of the food do not so act.

In 1895, Reinert ridicules Bunge's notion that the therapy of iron is that of suggestion. Bunge's work, he adds, was done upon animals, and we know of no chlorosis idiopathic to them. In 1896 Da Costa recommended hypodermic use of iron, employing solutions of ferrous manganese citrate (sic). Rosenthal, the same year, injected into his own thigh some pyrophosphate. Thirty minutes later he recovered iron from the urine. Rocci agrees with Da Costa in the value of hypodermic administration, which produces a parenchymatous hyperemia. G. Swirski, in 1899, shows us that iron is carried partly by the blood-vessels and partly by the lacteals. By the latter to the general circulation; by the former to the portal circulation. It is the eosinophile cell which selects the iron, or is selected by it, to perform the hepatopheral function, the ferric element is earliest deposited in the periphery of the lobule, and with continued accessions the deposit advances toward the center.

Wilson, 1900, advises iodid of iron in cases of infectious arthritis, especially of gonorrheal origin. Cure in three cases is detailed. The dose should average 30 grains in solution, and the dose ascends one minim daily.

In 1900, Mueller comes out on Von Noorden's side as to the stimulant action of iron salts. Iron increases the number of nucleated red blood-cells, and the mitoses. He cautions us against the use of tincture of iron. It is a caustic preparation and none such is helpful to the mucosa. The oxytartrate of iron, or ferrous carbonate (fresh) are both good. Cloetta believes that iron leaves the stomach in the chyme quite ready for assimilation. But intestinal conditions interfere with this assimilability. Heurotay recommends hypodermoclysis in amenorrhea of the young due to anemia. Pyrophosphate of iron, or its glycerophosphate was given in the sub-mammary region: 15 grains to the pint, or about one gram to 500 cc. Of this he injects 300 to 400 cc. A feeling of prostration was observed during the next 24 hours. Gilbert and Lereboullet recommend the cacodylate of iron in chlorosis and generally in the chloranemias, especially in tuberculous forms. Sandoz, too, employs the cacodylate for tuberculous anemia. He notes a rapid improvement in appetite, an increase in body weight, lowering of temperature, disappearance of night-sweats, and general amelioration.

In 1901-2, attempts were made to convert the long-suffering hen into a patent-medicine factory. Hartung tried by excess iron-feeding to produce iron-heavy eggs, for therapy. 100 gm. egg contain 4.4 mg. iron. After iron was fed to the hen for three and one-half weeks the amount rose to 4.5 mg. After some ten weeks it amounted to 7.4 mg. After one year, to 7.3 mg. This spelt failure. So the hen refused to become a part of the drug store.

After hemorrhage, or blood depletion by mass, Baumann found that iron requires conjoint use of

arsenic to obtain best reconstruction. What has arsenic to do with the fat parenchymata? He does not say. We may reason that the lipoids of bone marrow are affected by arsenical therapy.

In 1902-3, Landau found that duodenal absorption of iron transferred the ferric content to the spleen. A microchemical test with sulfid of ammonium and the production of ferrocyanogen was used. Hepatic tissue and bone marrow, too, received some of the iron. Iron is excreted by the cecum, and to some extent by the large intestine. The convoluted tubules of the kidney seem to eliminate iron, according to this student, although earlier work (vide supra) denies urinary ferric content as normal.

Wilcox, in 1904, objects to the term organic, and replaces it by the word "masked" iron. He complains that so-called organic iron compounds are mere combinations of iron salts with albuminoids; they still react to silver nitrate. In true masked iron preparations, hematoxylin solution gives no color change.

Tartakowsky shows conclusively, Arch. f. d. ges. Physiol., 101, p. 423, that inorganic iron is absorbed and directly utilized.

The question of the constipating action of iron is not alone that of its intestinal precipitation, but of the hepatogenous influence. The portal circulation may become clogged with ferruginous elements. If iron is needed directly in the circulation, and if, as is shown by previous work, the lacteals convey a portion of the iron directly into the blood vessels of the general circulation, it might be of help to know how to produce a lacteal positive iron, one which was akin to the fat and lipoid elements which the lacteals select.

The Paucity of Drugs in a Physician's Armamentarium.—Some one comments upon the sixteen or so drugs in the physician's daily formulary. We read another's remark that calomel, strychin, quinin, and opium are the cure-all quadrant.

Why is it that we compose our formulas from such a sparsely chosen armamentarium?

Because medicine is again at an epoch of the turning of the ways. When Prof. James Tyson elected to place Tuberculosis, Pneumonia, and Rheumatic Fever in his section on infectious diseases, he was quite a pioneer. Even at that, he retained Endocarditis in the section on the circulatory system, and Tonsillitis (infectious, too) in the section on Digestive Disturbances!

It may seem unsystematic to group infectious diseases by themselves. But it was a needful step in the development of right thinking, and led to therapeutic advance. Read over the index in any book on Systematic Medicine. The grouping of diseases is frequently an index to the therapeutic notions of the editor. It is evident that he will find in nervous diseases a very complicated territory, for the nature of a nervous impulse and its disturbance, abeyance, or distruction will be suppositious. Infections of the nervous system, being matters of connective tissue and circulatory disturbance, admit of clear thinking.

Therapy, therefore, becomes one of three sorts:

1. Specific, as in vaccines and in syphilitic mercurials, malarial antiperiodics, quinin, calisaya, etc., and anthelminthics.

2. Symptomatic, as in opium for pain, and spiritus etheris nitrosi for fever, and purges.

3. Mechanical, as digitalis for the pump cardiac, or electric or thermic stimulation of skin and nerves.

Such a simple view of therapy occasions a simple division of pathology. For we do not treat symptomatically when an antitoxin or a specific is effectual.

In infectious diseases not treated by vaccines or by specific remedies, we employ febrifuges, sedatives, stimulants and circulatory antiseptics, as salol, bromid, strychnin, and sweet spirit of nitre. Iron and hematinics, as well as quinin and calomel.

In irritated conditions, due to dermal or mucous membrane congestion, without infection, we see oils employed, or emollients.

One-quarter of all our strength and exertion is devoted to eating and digestion, so that purges and laxatives embrace a main chapter of therapeutics.

To surgery is allotted the vast region of injuries and foreign bodies, and their sequels, and neoplasms.

A final group may be made to include asthenia or constitutional conditions, as purpura, obesity, hemophilia.

Therefore, leaving aside the surgeon's armamentarium, and that of specific and vaccine therapy, we find that symptomatic therapy demands modestly of any of us:

1. Tonics, strychnin, iron, arsenic;
2. Febrifuges, coal-tars, nitrites, nitrous ether;
3. Analgesics, general and local, opium, cocain, alcohol;
4. Sedatives, bromids, chloral, camphor, valerian;
5. Acids and alkalies;
6. Emollients and irritants, ointment of rose water, lanolin, mustard, petrolatum;
7. Purges and laxatives, calomel, cascara, aloin, podophyllin, croton oil.
8. Stomachics, ipecac, gentian;
9. Alternatives, phosphorus, iodin, iodid;
10. Excipients, flavors.

To these a few might be added. As a matter of fact, the field of therapy is shifting rapidly to specific lines, and symptomatic treatment is so entirely adjuvant or negligible as to sweep away the thousand and one nights of last centuries' wonderbook.

Dietary for Arthritic Children.—

1. Turnips with white sauce: Cook thoroughly after washing, and then remove all water by straining. Cover them with several tablespoonsful of white sauce. Serve.

2. Purée of turnips: Prepare them by washing and boiling in water as above; when ready to serve, add one-third of their weight of purée of potato.

3. Oyster-plant: Chop up finely a rhizome of salsify (oyster-plant) after washing in water slightly acidulated. Dilute four tablespoonsful of farina in two quarts of water containing the juice of half a lemon. Put the oyster-plant into this dressing and boil. Allow to cook slowly for an hour and a half.

4. Oyster-plant with white sauce: Cook the pieces as they are, and drain, serving with a separate portion of white sauce.

5. Oyster-plant with beef-juice: Cook in water as they are, and drain, basting with the dish-gravy of roast-beef, which has had the fat removed.

6. Oyster-plant as a purée: Cook the rhizomes, and mince them thoroughly, then mash. Add to the purée a little butter and a few tablespoonsful of cream.

7. Custard: Boil a pint of milk with five table-

spoonsful of sugar and flavored with vanilla. Pour this luke-warm milk upon four beaten yolks of egg. Mix, and pour into stout white cups. Bake twenty-five minutes.

8. Vanilla cream pudding: Boil a pint of milk with six or seven tablespoonsful of sugar, flavored with vanilla. Pour this, luke-warm, upon four beaten yolks of eggs and one entire egg. Mix thoroughly and cook for twenty-five minutes. Allow to cool and mould.

9. Snowy eggs: Boil a pint of milk with six tablespoonsful of sugar, and flavor with a little vanilla or orange. Separate the whites and yolks of four eggs. Beat up the whites until quite firm and sweeten them. Add them by teaspoonful to the milk as it boils, so that they are upon the surface, turn them, and remove them by a skimmer. When all the whites have been so cooked, beat the yolks, mix them with the milk which has been strained and again placed on the fire. Stir until it thickens and pour over the whites not quite concealing them.

Paris médical, 29 April 1911.

Thoughts of an Elderly Physician.—

1. Care for as you would be cared for.
2. A good physician is one who can individualize.
3. Never show anger towards a child.
4. Show to the patient that you perceive the *why* of his ailment, but do not render him as wise as yourself.
5. Go, when the patient requires you, but do not go beyond his desires.
6. Treat a question in detail: a massage may be measured by the proportion of talc expended.
7. A doctor in a vehicle never looks like a fool.
8. Always remember, by the bedside, that you have treated a similar case and that you relieved your patient.
9. Everybody requires a miracle, a sick person most of all.
10. Make people understand frequently that your conception of your profession differs from theirs.
11. Take any payment when offered (adds the French monitor). It is customary in England, and English people are acquit of false sentiment.
12. In regard to your fee, remember that people will weigh your science in proportion to the number of dollars you receive.
13. It is never permissible for a doctor to be in a hurry except in the midst of an operation, or when he finds a patient sleeping.
14. Never explain to a wise patient; you may thereby conflict with his ideas, and his theories of treatment.

(Paris médical, 22 April 1911.)

Paying Workmen for Accidents After they have been crushed and dismembered, observes our lay namesake, is not a very satisfactory way to remedy evil conditions in employment. Yet thus far in public discussions this has been put forward as the sole remedy. What does it profit a laboring man's family if the law provides them from the employers' funds with compensatory damages? No damage can sufficiently compensate for his maiming or death that deprived the family permanently of the father's services, to say nothing of the mental anguish and grief occasioned by his loss. The Wainwright Commission of New York State presented in 1910 an admirable report on the liability of employers in these distressing cases, and the legislature acted upon it; the law of compensation, so far as it can be satisfactorily applied, is in force. This Commission has since been sitting to devise the means of preventing accidents. Upon the right settlement of this question all the instrumentalities of agitation should, manifestly, be directed. This question involves the extent of the present powers of the State Labor Department, its jurisdiction and equipment; it has to do with the additional restrictions relating to the proper guarding of dangerous machinery and the adoption of safety devices; it means appeals to employers to furnish, in their own interests, the most efficient safeguards, and the exhortation of employees (for the sake of their lives and families) not to disregard the rules imposed for their personal safety.

The English Medical World has been greatly stirred by the result of charges preferred before the General Medical Council by the British Medical Association against Drs. Wallace, Trumball and Wallis, "that they had associated themselves in their professional capacity with 'an institution termed the Sandow Curative Institute, which systematically advertises for the purpose of procuring patients who are to receive, either by correspondence or by attendance at the said institute, treatment for disease under the personal direction of Eugene Sandow, who is not a registered medical practitioner,' and that they had approved of and acquiesced in such advertising; and that in relation thereto they had been guilty of infamous conduct in a professional respect." Lord Robert Cecil was counsel for the defendants and proved that they had nothing to do with the management, the treatment or the profits of the establishment. All they did was to examine patients before their entrance, to see if they were victims of any organic or general affection which might incapacitate them for the physical exercise which is the basis of the Sandow treatment. Dr. Wallis testified that he had been associated with the institution since 1907; but had never done anything worse than certify whether a particular patient was fit for certain exercise. The counsel found him guilty and ordered his name to be erased from the Medical Register. In the case of the other two defendants judgment was deferred in order to permit them to review their positions.

Automobile Treatment of Some Nervous Disorders.—The Medical Record observes that the special literature of automobiling in its relation to disease is meagre and imperfect; one must read miscellaneous descriptions of cases in order to learn the favorable or unfavorable effects of relatively new methods of locomotion on diseases. There is nothing specific about the motion of automobiling—which is merely a matter of petty shocks or vibrations such as occur in railway trains. And if automobile journeys appear to produce certain effects one may quite safely assume that railway travel will be followed by the same or similar consequences. At a recent meeting of the Berlin Society for Psychiatry and Nervous Diseases Oppenheimer read a paper on habitual vertigo, from which it appears that this condition is less apparent to the patient when riding in automobiles or railway trains. A colleague in the discussion stated that he had seen the same sequence, but attributed it to psychic causes, such as distraction of the attention; he cited the case

of a rope dancer who suffered from vertigo when on the ground, but was never bothered while in the air. The psychic factor is naturally in evidence here; and the state of affairs is paralleled by the actor who always stutters while off the stage, but never while speaking in a play. Another colleague stated that the patient with habitual vertigo feels in better spirits on an automobile or railway journey; and this is also true of paralysis agitans sufferers. This favorable result is no doubt due to the fact that the involuntary motion imparted by the vehicle antagonizes the sensations of vertigo and tremor.

Shanghai is to have a new educational centre in 1912—the Harvard Medical School for China. Ex-President Eliot has described the foundation of this institution in the June number of the Harvard Graduates' Magazine. The recent plague outbreak in Manchuria should give point to Dr. Eliot's statement regarding the urgent need of introducing the methods of modern medicine into the kingdom of the Yellow Dragon. Dr. Martin R. Edwards, who spent several months in studying conditions in the principal cities of China, believes that the new school will have all the students it can take care of. The native officials, once convinced of the non-political character of the scheme, at once concurred. It was thought prudent before beginning work to raise a fund of $25,000 for five years; pledges for $31,000 were soon gathered, of which $12,500 were subscribed by the Legislatures of Oregon, Washington and California. Four professors and two assistants are to be shortly appointed; and three of these are to set out for China in order to open the institution next February, at the Chinese New Year.

The Seasoned Tobacco Pipe.—The Lancet finds that most smokers admit a pipe is not agreeable until it has been well seasoned; hence the well burnt, dark colored, oil laden pipe is as a rule a highly cherished accessory to the smoker's habit. Many a smoker besides will argue that it is the accumulated oils and products of combustion which give the pipe its so-called antiseptic qualities. However, Dr. J. D. Reckitt affirms that the seasoned pipe may be poisonously saturated with oils, be these nicotine, pyridin or other toxic substances which the chemist has detected from time to time in the condensed products of tobacco smoke. This view occurred to Reckitt when he noticed the continued dyspnœa of a patient; all the ordinary reasons for such a dyspnœa having been gone over with and found not to obtain the uncommon possibilities were considered. At length an "old friend" of the patient, in the shape of a very dark colored briar which he had smoked on and off for ten years, fell under suspicion; which, it seems, was well founded, for immediately on giving up this friend the dyspnœa passed away, so that within a month he was for the first time in years free of this distressing symptom. Reckitt next upsets another delusion—that the Turkish cigarette does harm; his patient, having given up his pipe, "consoled his tobacco hunger with a dozen Turkish cigarettes daily," which practice appeared to be innocuous. It certainly would not be for boys and youths.

Longevity in France.—Much has been said concerning the diminished birth-rate in France; however, it seems that in the last quarter-century infant mortality has decreased fully 30 per cent., while the average length of human life has increased 20 per cent. Professor Lannelongue, who is now President of the Academy of Medicine, explains the first of these statements by the widespread reforms in hygiene. As to the second: At the beginning of the last century the average duration of life barely exceeded the age of thirty, in 1880 it was up to 40, and now it varies between 47 and 48. The progress of science (which has lowered the rate of mortality from epidemics and contagious diseases) and the development of hygienic principles among all classes of society, have certainly helped to delay "the inevitable hour." Another reason, however, is not so satisfactory; this is the steady diminution of the birth rate. Up to two years infant mortality is very high; out of 1,000 infants from 200 to 300 die in the first years. And this dreadful mortality naturally tends to diminish the average life rate. As the birth rate has been decreasing for some time, fewer infants die; and the average rate of human longevity will further increase in proportion to the further decline of the birth rate. This explanation, given by Lannelongue, may perhaps apply also to other countries than France.

A Humiliating Defeat.—Medicine fell a victim to Theology on the Crescent Oval Diamond in Plainfield, N. J., on the occasion of a ball game played for the benefit of Muhlenberg Hospital; fully 5,000 watched the pastors roll up a score of 17 to 8 by our profession, which was on this occasion attired in Red Cross suits. Sky-Pilot E. C. Conover struck out twelve men; Dr. W. H. Anthony pitched for the Blood-Letters, but was badly hit. The nurses from the hospital helped along by selling peanuts, soft drinks, souvenir programmes and cigars; and in this good work physicians and venerable clergymen assisted.

The Wonderful Attainments of the Blind may tend to divert the public attention from the work of preventing blindness; they take more interest in reading of triumphs over this disability than of obviating it. In many of the schools for the blind more than 30 per cent. of blindness has been produced by ophthalmia neonatorum. Industrial accidents are responsible for another, and a large proportion of adult sufferers. Both of these causes are capable of far greater control than is now exerted over them. Education of blind children with seeing ones is proving highly successful. Next to eliminating an affection is minimizing the consciousness of it. But nothing in the way of success in these respects, with the extraordinary credit it reflects upon the gifted men and women responsible for it, should obscure the public duty of rendering such skill and devotion as nearly needless as human care can make it.

The Physician's Fee.—The Medical Record expresses an admirable opinion: Those who discuss this subject frequently miss the essence of it. Under present social conditions the charge made to the wealthy and well to do is the normal and proper fee; the lowered charges, made to those less fortunate, are concessions. The tremendous field of the physician's charity is therefore usually underestimated, for it extends to a great majority of his patients. In olden times, when medicine was nearly all art and but little science the fee was unknown; like other artists the leech received an honorarium, the weight

of which depended naturally upon the patient's resources. The popular impression that the physician makes the rich pay for the poor is incorrect; they extend their services to all alike and all are supposed to pay as much as they can afford for services really priceless and impossible to represent adequately in money values. Any attempt made to establish standard fees by law is sure to work injustice to physicians; the standard fee would have to be much higher than the average fee at present and there would have to be some method of enforcing its sure payment. Only with the standard fixed, as now, by the ability of the wealthy is it possible for the poor to receive the benefits of the highest professional skill without losing their self-respect.

Summer Food for Infants.—The Committee for the Reduction of Infant Mortality of the New York Milk Committee, recognizing that a chief cause of mortality among infants in hot weather is improper feeding, has prepared menus of what babies should eat from the twelfth to the eighteenth month; from the eighteenth to the twenty-fourth; from the second to the third year; and from the third to the sixth. There is no menu for the first year, since milk or infant food is then the only proper diet. The first menu (for a child between twelve and eighteen months) is as follows. First meal, on rising: One or two ounces juice of a sweet orange, or pulp of six stewed prunes, or one ounce pineapple juice; eight ounces milk with either zweiback or toasted biscuits or stale toasted bread; fruit must be given either one-half hour before or one-half hour after milk. Second meal, during forenoon: Milk alone or with zweiback. Noon meal: Six ounces soup, or three ounces beef juice; soup may be made of chicken, beef or mutton; stale bread may be added. Fourth meal, afternoon: Milk or toasted bread and milk. Evening meal: Four ounces thick gruel mixed with four ounces top half milk, with zweiback; gruel may be made of oatmeal, farina, barley, hominy, wheatena or rice; apple sauce or prune jelly. Total milk in 24 hours, one to one and one-fourth quarts.

Warning as to Surgery of Tuberculous Conditions.—Calot says that the danger or fistula which is imminent in any interference with tuberculous arthritis or dactylitis and all other regional forms of the disease, should make us watchful to avoid the conversion of closed lesions into open ones, as thereby we invite death. In the Journal des praticiens of April 1, 1911, he devotes space to grouping into four the classes of cutaneous and subcutaneous, deep and skeletal tuberculous invasion.

By the aid of diagrams and plates he establishes the points in treatment.

Any mixed infection is to be feared.

Those who remember the suggestion in Treves' Surgical Anatomy as to the possible future treatment of tuberculosis of the lung by opening and curettage with drainage and general surgical attention, will be surprised to see this reversal of opinion on the part of surgeons. It may prove true that less is to be feared from the chance of a mixed infection than from the ravages of tuberculous disease.

Nature of Chorea.—George Dow Scott writing in the June MEDICAL TIMES considers the etiology of chorea. He shows that among diverse opinions Foerster, Gower, Bonhoffer, Siegert, Henoch, Ogle, Pye-Smith, Meynert, Elischer, Flechsig, Dana, Hughlings Jackson, Garrod and Lockhart-Clarke believe some fundamental lesion in the nervous system is to blame. Half of these students, Dana, Ogle, Pye-andSmith, and Meynert among them, report hyperemia and other changes.

Mackensie, Cheadle and Rachford say that rheumatism is causative, and the nature of rheumatism becomes important, for those who believe in a rheumatic origin consider some infectious element possible; indeed, Leube, Moebius, Roch, Pianese, Preobozenski, Naunyn, Steinkopf, Rachmaninow, and Neubner assert some specific antigen is the source of chorea, in this approaching, or developing the nervous theory as a secondary process. Metastasis, septicemia, and embolism are called upon.

Aiding Consumptive Workingmen.—Two years ago Dr. M. S. Overlock, State Health Inspector for Worcester County, inaugurated a movement for the treatment of consumptive working people at the expense of their employers which has been approved by President Taft, Cardinal Gibbons and prominent scientists the world over. This movement now embraces a million and a half working people whose employers have agreed to defray their expenses should they need treatment for tuberculosis; it has spread through the New England States, to New York and as far west as Ohio; several European countries have also adopted the plan.

The Prophylaxis of Deafness.—At school, according to recent French studies, much transient otologic disease may be found. Deafness, more or less serious, amounts to a large percentage, and Gaudier and Lieu, in the Echo médical du nord, 16 April 1911, assert that the bald fact of ability to follow a conversation is misleading. The child, or patient, may possess serious aural difficulty. One child in ten offered to recent tests a deafness in one or both ears!

Some cases were due to local and remediable causes, but might have gone unnoticed.

Crisis in Medical Competition in France.—The Journal des praticiens, April 1, 1911, says in a signed editorial that many of the profession are considering limitation of the number of medical men, and assigning a portion to each region.

But this would result in creating of the doctor a minor functionary of the state, not a pleasant or effective situation for us to find ourselves occupying.

What success is attained in Geneva with its forty medical men may be obtained through purely local and restricted conditions.

Hypodermic Syringes or Needles shall not hereafter (in accordance with the terms of the Boylan bill, which the Governor's signature has made a law) be disposed of by retail dealers for the injection of opiates without first registering the name and address of the buyer, who must present a written order of a duly licensed physician or veterinary. More opiates are consumed per capita in the United States than in China. New York has thus set a good example for the rest of the Union and for Congress, which should

now make these instruments unavailable except to physicians.

Checking Tuberculosis.—The New York State Department of Health in a recent report shows that there has been a decided decrease in the number of deaths from this cause in proportion to the population. In 1885, for instance, 7,189 deaths were reported from this disease in New York City, and 11,235 death in the entire State, while in 1910, the total for New York City was 8,960 and for the State 14,047. While there has been an increase in number, this increase is not in proportion to the increase in population during the same number of years.

The Molokai Leper Colony has not grown in several years past, states O. B. Thomas of Honolulu; in fact the number confined on this island has been decreased by the discovery that some of them were not suffering from the disease. The district in which the lepers live is separated from the mainland by a high range of mountains and the lepers have a regular municipal government of their own. They have their schools and their amusements and pursue their daily work with as much pleasure and industry as the inhabitants of thriving villages.

Health Resort Sanitation. — Due consideration is not always given, according to the opinion of Dr. H. B. Wood, Jackson, Miss. (Journal A. M. A., April 8), by physicians to the sanitary condition of the health resorts which they recommend. We cannot trust entirely to accounts or advertisements, and physicians should know what constitutes safety in each particular resort. Many resorts are ideal, but it is the occasional hotel or town conducted blindly, without any medical or sanitary supervision, which becomes a risk amounting to a menace. If the resorts furnish pure water, pure foods and has eliminated noxious gases, plants and insects, and becomes in no way a distributing station for environmental or infectious diseases, it deserves the recognition and patronage of physicians. Health resorts are not to be judged by their financial outlay or advertisements, but by their maintenance of healthy conditions. He cites the bad conditions found in certain places recommended for invalids, which are the exceptions to be sure, but are nevertheless a danger. The conditions are largely due to ignorance and in many cases will be corrected on proper representation being made. When these fail more forcible arguments are required, as in New York State, where the Board of Health considered it its duty to warn the public against sixteen places on account of the dangerous conditions kept up. In maintaining state sanitary control there should be classed as health resorts all towns usually advertised or considered as resorts, hotels used by summer or winter visitors, pleasure or recreation resorts, parks and camps, the so-called watering-places, medicinal springs, and localities or institutions advertised as sanitariums. The adoption of legislation putting all hotels under sanitary inspection and fixing a standard of efficiency is desirable. Mineral spring resorts should be placed under licensure, their value being determined by competent authorities and frequent sanitary inspections made. The exaggeration of the curative qualities should be placed in the same category as misbranded nostrums. In cities it is most practicable to keep the infection away from the public, but in small places and isolated resorts it is more practicable to keep the people away from the infection, and especially to keep infection carriers from endangering others. Too much trust should not be placed in mortality statistics. A place may have a large infant mortality and yet be safe for visitors, or mortality rates may be low on account of native insusceptibility but the danger which to visitors is great. In a healthy town the rate may be increased by persons going there for their health, and the influence of hospitals within the city and the fact of imported or exported cases should be considered and allowed for. It has been estimated that 22 per cent. of the cases of typhoid in the District of Columbia are imported, and the same is true of 10 per cent. of the cases in Philadelphia. Eliminating the statistical factors of susceptibility and age grouping, some idea of the existing conditions may be gathered from the typhoid rates in the registration area. Wood gives the figures for a number of localities, some of which might surprise some health seekers. Still it is unfair, he says, to judge the health activities of a locality by a mere comparison of rate figures or by the apparent rapidity of the decline of the rates. The conditions with which health officers must contend are variable and in some places almost insurmountable. Physicians, he says, should not be reticent about giving unasked advice, but when opportunity offers, should aid proprietors to improve conditions. The confidence of the public is the chief asset of resorts, and those which deserve it should be patronized.

Medical Education.—In an address before a joint session of the Association of the American Medical Colleges, the National Confederation of the Examining and Licensing Boards and the Council on Medical Education of the American Medical Association, J. A. Witherspoon, Nashville, Tenn. (Journal A. M. A., May 27), notices the advances in medical education that have been made in the last few years and foresees the day of reckoning for diploma mills and uneducated physicians or quackery of all kinds as not far distant. He insists on the requirements of preliminary education as imperative and thinks that admission to American medical colleges should be very carefully guarded. While he accepts as a minimum the four-year high-school course and doubts the propriety of raising this minimum standard at the present time, this should not interfere with the requirement of much higher standards by favorably situated colleges. He favors the practical side of medical education which is, he thinks, in some danger of being lost sight of, and thinks that the addition of a fifth year to the course would be better than the requirement of an additional preliminary year of preparation. In conclusion, he offers the following suggestions: "1 This association should adopt a uniform standard after consultation with all forces interested, and enforce this standard by frequent inspection of members. 2. Inspections of both applicants and members should be placed in the hands of a judicial council or a committee appointed for the purpose; at least two men should be required for the inspection of any school, and the report should be in writing for future reference. 3. The interests

of the association demand that the work be divided up so as to utilize as many men and their influence as possible, if we would broaden our field of usefulness in both higher educational and moral or ethical standing sufficiently to make membership an honor so distinctive that all good schools will desire the connection. 4. At present the four-year high-school, or the fourteen units for entrance and a four-year strictly graded course of study of 4,000 hours is as high as the conditions of education will permit. 5. If an additional year is wise, then a fifth year following the present four-year plan, which shall be strictly practical and bedside in hospital wards, is preferable; and this association should insist that a hospital controlled by the college is essential to thorough training. If these suggestions are carried out then this association will be a great factor and the day will not be distant when the medical men of America will be recognized all over the world. Then and not until then will this association have fulfilled its true mission."

Insanity Cured.—Dr. S. M. Robertson, physician superintendent of the Royal Edinburgh Asylum for the Insane, relates in his annual report ("The Scotsman") some remarkable cures: In a case of the insanity of myxedema the body had increased in bulk, the movements become slow, the facial expression changed completeely, and the tone of the voice altered in character; the patient's mind became childish, silly delusions were expressed and she heard imaginary noises. Having for a week been given tablets prepared from the thyroid of the sheep she was at the end of that brief period transformed from a mishappen, stupid object into a bright and pleasant featured woman—her natural self, and quite unrecognizable as the creature of a week before. "A few centuries ago these kaleidoscopic changes would have been put down to magic, the spell of an offended wizard transforming her body and soul and a counter charm restoring her original shape and personality. To-day every medical man knows the secret, and people have ceased to be astonished at such things. Nevertheless, it was a miracle of science."

Another case of insanity was due to an excess of the thyroid secretion in the blood, by which were manifested great nervousness and excitability and many other symptoms, such as palpitation; there is a theory, not yet established, that excess of thyroid secretion is neutralized by some substance in the blood, of which substance (according to theory) there was not sufficient to neutralize the great excess; the patient was, therefore, supplied with serum (suprarenal extract?) from a goat whose thyroid had been removed. Apparently as a result of this treatment a good recovery was made.

Treatment of Stuttering.—E. W. Scripture, New York (Journal A. M. A., April 22), discusses the peculiarities of speech known under the name of stuttering or stammering, to which last designation he objects as superfluous and liable to lead to confusion with the German word stammeln, which means lisping, not stuttering. Laryngeal cramps, he says, are a never failing symptom and it is not unusual to find a patient who never has another symptom in the presence of a physician than the monotonous laryngeal tone of voice. This fundamental symptom, he says, seems to have escaped all writers on the subject. Cramps and spasms of the muscles of enunciation are the ones most apparent to the observer, and less frequent but more striking, are the contractions of muscles not usually used in speech, such as those of the neck or eye or other parts of the body. An almost constant symptom is excessive rapidity of speech, indicating, sometimes, a desire of the stutterer to get his words out before he is caught, or in other cases an expression of nervous anxiety. A never-failing symptom is lack of confidence in the patient's power of speaking correctly and this is sometimes sufficient to make it impossible for him to enunciate certain words. The stutterer is always in fear that his speech may "go back on him." The simplest form of stuttering is that of pure habit, due sometimes at first to imitation, but stuttering almost always goes beyond the habit stage. The curative treatment is based on the principle of correction of the abnormal voice that almost always exists. The patient does not usually stutter when singing or otherwise using his voice in an unusual way and he can be trained to speak in some sort of an odd voice. This is the method of the stammer schools and stutter cures and is not usually permanently effective. The essential point is that the stutterer should feel his acquired speaking voice to be that commonly used by him. There is another way of speaking that is unusual to the stutterer, *i. e.*, the way in which normal persons speak, and the therapeutic procedure on this principle therefore will be to teach him to speak normally. The "principle of habit formation" implies that the new way of speaking is to be drilled into the patient so as to become a habit. The "principle of spontaneity" is requisite because when the patient has learned to speak perfectly he may still be unable to do so when he speaks of his own accord. The "principle of increasing embarrasement arises from the fact that when a patient learns to speak correctly in the presence of his teacher he may not be able to do so in the presence of others." In the beginning his exercises may be made privately but later with a gradually increasing number of strangers. The "principle of correct thinking" is that the abnormal habits of thought which the stutterer always acquires to some extent are to be corrected by appropriate exercises, and the latter part of the paper is given to describing the needed exercises.

The Treatment of Ringworm.—D. W. Montgomery, San Francisco (Journal A. M. A., May 27), says that while the St. Louis hospital at Paris is one of the oldest seats of medical learning in the world, it looks it in its antiquated buildings and backward administration in many respects. A notable exception, however, is its skin department, which is one of the best of the kind that he has ever seen. It handles an immense amount of clinical material and its surgeons are among the foremost in the world in this specialty. He specially mentions the clinic of Sabouraud and his treatment of ringworm by the X-ray. The methods are described in detail and some of the prescriptions employed are given, with full directions for their use. The X-ray treatment has some advantages. The difficulty of treating ringworm of the scalp with the

ordinary methods lies in the thick coating of stout hair in which the fungus lodges, but with the affected area completely denuded of hair by the X-ray the disease becomes as easy to treat as if on the free surface of the skin. A rather heavy dose is required, however, usually for about fourteen minutes at 20 cm. The risk of causing an X-ray burn is therefore imminent. In Sabouraud's clinic it is said that they never have any unfortunate results, but other operators are not always so successful. The pastilles of Sabouraud which are used as control tests, as made in Germany, England and France, are not always of uniform composition and their change of color when interposed in the X-ray may not always be a reliable guide. When an ordinary pyogenic infection of the scalp is associated with ringworm Alibour's lotion is an excellent remedy. It is composed of sulphate of copper 2 gm., sulphate of zinc 7 gm., camphorated alcohol 20 gm., water from 1,000 to 2,000 gm. It is an excellent antistaphilococcic lotion, and can therefore be used in erysipelas, etc., with advantage. In conclusion, Montgomery speaks of the immense skin disease material passing through the hospital which is an embarrassment of riches, as inducing imperfect diagnoses.

Appendicular Dyspepsia.—R. C. B. Maunsell (Brit. Med. Jour., May 6, 1911) opens the abdomen by the ordinary oblique incision, removes the gangrenous or perforated appendix and passes large "cigarette" drains from the wound to the bottom of the pelvis and to one or both kidney pouches, according to the diffusion of the purulent exudate. Silkworm-gut stitches are then placed in position, but not all tied; and the patient is "nursed" in the "Fowler" position, whilst plenty of saline solution is administered per rectum. Maunsell does not find it necessary, even in the most diffused cases, to make counter openings in the loin or elsewhere. The drains are removed in 36-48 hours and more of the sutures are tied; but the wound is not completely closed.

Injury and Cancer.—W. B. Coley (Am. Surg., May, 1911) has studied 1,200 cases and finds that any kind of local trauma, from chronic irritation to a single contusion, is not infrequently the direct exciting cause of malignant tumors of all types. A single local injury may cause a carcinomer as well as a sarcoma. Coley's cases fulfill all the conditions necessary to establish a definite causal relationship between a single trauma and the development of a cancer; this relationship in a way depends on ability to offer a scientific explanation of it; nor does it depend on the acceptance of any one of the various hypotheses as to the causation of cancer. It can equally well be explained whether the extrinsic or intrinsic origin of malignant tumors is accepted.

Pancreatic Diseases.—The etiology is discussed by J. E. Davis (Med. Rec., May 13, 1911), who has observed and treated one case of carcinoma and three of diabetes mellitus in which functional tests pointed to pancreas involvement. Advantage was frequently taken of the test findings and adjustment made in the quantitative relations of the fat, protein and carbohydrate. Very marked relief was consequently afforded; in two of the cases, which resulted fatally, life was certainly prolonged.

Acute Tonsillitis.—H. Hays (Med. Rec., May 20, 1911) first anesthetizes the tonsil with cocain and then applies 50 per cent. silver nitrate to the opening of each crypt; the patient afterward uses a peroxide of hydrogen spray.

Hemorrhoids.—E. S. Bishop (Brit. Med. Jour., May 6, 1911) believes Whitehead's radical method of obliterating the perineal portion of the internal hemorrhoidal plexus to be the only one that will prevent any return of the condition. But to be effective the whole perineal portion of this plexus up to the pectinate line should be removed and the mucosa beyond brought down and firmly fixed to the skin. Failure to do this is at the root of organic aual stricture following the operation. In many cases of organic stricture following operation dissecting out the resulting scar tissue, freeing the external sphincter and bringing down the submucosal layer to the skin will result in a cure.

Comparative Longevity of the Sexes.—A. H. Stewart (Med. Rec., May 20, 1911) has found a great preponderance of women in the older population; the greater the age the greater is this preponderance. After allowing for the greater mortality of man in war, and from accidents, dangerous occupations and from masculine excesses, it is probable that nothing short of a constitutional difference can account for the greater tenacity of life in women. The latter is a physiological miser, accumulating energy without expending it; whilst man is a physiological prodigal, expending more energy than he accumulates.

Every Community will have the mosquitoes it deserves, observes an astute city exchange. A retired business man of Elizabeth, N. J., killed more than a thousand mosquitoes by actual count in his cellar after the open season of 1910. Residents of Summit of a statistical turn of mind had last summer much the same experience. "The warfare against the Jersey canary that threatens to depopulate eastern New Jersey in the summer months unless its ravages are stayed, must begin at home. Boards of Health are now furnishing householders with fumigators to destroy the lurking enemy."

Altruism in Turkey.—The oath which young doctors take in Turkey (analogous to our Hippocratic oath) is said to contain this pledge: "When I am called at the same time by two different patients, the one rich and the other poor, I will accept the call of the poor without taking into consideration the money offered and will do my best for his treatment; and I will never decline to answer any call, day or night, during the reign of common diseases, or of an epidemic of contagious diseases." Just as well to start, at any rate, with high ideals.

Mosquitoes.—The Board of Health recently adopted an additional section of the Sanitary Code, reading as follows: Section 62A. Every tank for holding water, located on the roof or external part of a building shall be kept covered with a tight-fitting cover, or with an extra fine mesh screen to prevent the accesss of mosquitoes to the water therein; and every such tank shall be ventilated. Every tank from which water is furnished for general use, shall be emptied and the inside thoroughly cleaned at least twice a year, and at such other times as may be directed by the Sanitary Superintendent or an Assistant Sanitary Superintendent of the Department of Health.

MISCELLANY

The Mosquitoes' Revenge.—Prof. John B. Smith, State Entomologist, was vigorously attacked by mosquitoes on the platform of the auditorium in the Town Hall of Nutley, New Jersey, where he was explaining to an audience how this insect is fast diminishing in that State.

Skiagraphy in Urologic Calculus.—Cathelin reports twenty brilliant cases, and gives general suggestions. The technic is given most clearly and with diagrams in the Journal des praticiens, 20 May 1911. He shows that the process of skiagraphing is indispensable and further acts as an anodyne.

Leucocytic Formula of Pneumonia. — G. Etienne and M. Perrin show that while the formula in pneumonia is a polynuclear one, the pre-critical stage is a lymphocytosis. They explain this in the Paris médical, 20 May 1911, as a real percentage increase, and not merely a relative one.

Sarcoma of Ovary at Third Year.—This rare observation is due to Guibal of Béziers, France. Operation was successful, Paris surgical society, 10 May 1911.

The child was well 13 months after operation, and had lost the signs of previous sennal maturity observed at the outset. Weight of the mass was 4.90 kgm.

An annoying Habit.—A lady of Cardiff, Wales, has been sent to prison for ten months for pouring paraffin oil over her husband and attempting to set fire to him; all husbands throughout civilization will be glad to know that at last something has been done to discourage this foolish, inconsiderate and dangerous practice.

Electrical Treatment of Chronic Urethritis.—Those who have obstinate cases will find some interest in the article of E. Roucayrol, Paris médical, 20 May 1911. He describes the instrumentation freely, and excellent diagrams are included, showing the "détergeur" or spiral electrode, so constructed as to convey centrally the stream of irrigating fluid.

Swat the Fly is the battle cry of the Boy Scouts of Cleveland, Ohio, who have mapped out a campaign against this insect. With weapons of every kind, from a wad of newspapers to a patented wire "swatter," the boys are exterminating flies wherever they find them. Back of these boys (who should be emulated everywhere) is the Cleveland Board of Health, which is seeking to enlist the school children of the city in a campaign against flies and mosquitoes.

Scarlet Fever. — Levaditi, Prasek and Landsteiner report to the Paris Academy of Sciences, Paris médical, 20 May 1911, a series of experimental inoculations of material from human cases of this disease to chimpanzees, and the consequent angina, and eruption of an eranthem quite typical of scarlatina. The exclusion of streptococcus was made nearly certain by the experimenters. If this prove final, to what source may we attribute the disease?

The Great German Soldier Moltke once observed that a speaker who had sufficiently prepared his discourse and exercised the necessary self-restraint could deal exhaustively with any topic in twenty minutes. Those who become "intoxicated with the exuberance of their own verbosity" take longer to express themselves; this fact has been noticed in some medical meetings.

Syphilis Diagnosed by the Reaction of Precipitation with Glycocholate of Sodium.—Those interested in the problem of syphilis will read the studies of Porges, Bodin and Chevrel. The two latter report at a meeting of the French Society of Dermatology and Syphilography certain recent statistics:

Fifty persons, syphilitics, gave a proportion of 62 per cent. positive. Ten parasyphilitics gave 60 per cent. positive. One hundred non-syphilitics gave 14 per cent positive.

To Safeguard 4,000 Patients.—Mr. Edward Fitzpatrick, formerly a member of the Metropolitan Fire Department, is, at the Hudson River State Hospital, carrying out Mr. Croker's plans of instituting improved fire drills, better fire fighting apparatus and improved means of safety to prevent panic and insure the quick release of patients and attendants; there is a population of between four and five thousand at this institution.

Science May Make Men Tall.—Prof. Arthur Keith, Conservator of the Hunterian Collection at the Royal College of Surgeons, recently intimated that as a consequence of discoveries bearing on the relation between the pituitary gland and body growth, medical science might be able to regulate human stature. And the growth of various parts of the body might also be regulated; possibly, for example, the nose might be caused to grow to any desired shape!

Dyed Fish as substitue for smoked fish has been discovered in a number of Philadelphia delicatessen and other stores by the dairy and food bureau of the State Agricultural Department. The storekeepers were not altogether blameworthy, many having purchased the stuff at wholesale as genuine smoked fish. The dyed product has a rich red color; the examiner found he could dye wool with the coloring matter extracted from it. In smoking fish there is, it seems, a loss of fifteen pounds to every hundred; but in dyeing there is no loss at all. This permits the violators of the law to undersell their competitors in the smoked fish industry.

The Bacillus Pests in Milk. — Prof. Theobald Smith observed at a legislative hearing on a bill giving to the State Board of Health power to make regulations concerning the production and marketing of milk, that some suspected cases of plague which have been reported from the West might be spread to the East through the medium of milk. Thus, if men handling milk in the West were infected, there would be danger latent in the milk shipped East.

Splanchnoptosis and Pulmonary Tuberculosis.—W. Becker (Wisconsin Med. Jour., May, 1911) finds the former and the phthisical habit identical; hence this habit is not a specific phthisical inheritance. Stiller's costal stigma is not a constant concomitant of the same, indicating its presence but not its degree; this stigma, being a congenital defect and present in earliest infancy, can therefore be considered a diagnostic feature of the so-called phthisical habit long before phthisis has developed. Diagnosis of asthenia universalis (splanchnoptosis) offers good opportunity of combating the congenital disposition to tuberculosis.

MINERAL WATERS.

Chemical Composition — Empiricism the Basis — The Chemical or Physiological Exposition—Illustrative Cases — Indications for Carlsbad Water — Magnesium United with Calcium — Clifton Springs — Analysis of the Medicinal Properties — Illustrative Cases — Magnesium Oxide—Radio-Activity — Physiological Action — Atomic Nature of Radium.

BY JOHN AULDE, M.D., PHILADELPHIA, PA.

CHEMICAL COMPOSITION. — It will be interesting to note the chemical composition of two representatives, studying the metabolism of mineral waters, that of Carlsbad, Germany, and Clifton Springs, New York, both of which have attained popularity in the empirical treatment of various disorders. The remarks following are intended to develop the scientific basis for their employment, showing how these waters affect magnesium infiltration and enabling the medical attendant to determine positively whether his patient is likely to derive benefit from one or the other before deciding upon the "cure."

TABLE I.

CHEMICAL COMPOSITION OF THE CARLSBAD WATER.

Arranging the various constituents into groups (Mühlbrunn), we have the following values per 10,000 parts of water:

Potassium Sulphate	2.337	
Sodium Sulphate	23.171	
Sodium Chloride	10.132	
Sodium Fluoride	.051	
Sodium Borate	.030	
Sodium Bicarbonate	12.623	(1)
Lithium Bicarbonate	.091	(2)
Calcium Phosphate	.004	
Calcium Bicarbonate	3.293	(3)
Strontium Carbonate	.003	(4)
Magnesium Carbonate	1.628	(5)
Manganese Carbonate	.002	(6)
Iron Carbonate	.012	(7)
Aluminium Oxide	.003	
Silicic Anhydride	.719	
C02 as Bicarbonate	7.593	
C02 Uncombined	6.820	

(1) Corresponds to 20.001 Sodium carbonate.
(2) " " .167 Lithium bicarbonate.
(3) " " 5.335 Calcium carbonate.
(4) " " .004 Strontium bicarbonate.
(5) " " 2.825 Magnesium bicarbonate.
(6) " " .002 Manganese bicarbonate.
(7) " " .018 Iron bicarbonate.

As a further means of developing the peculiar medicinal properties of the Carlsbad hot springs in the treatment of both organic and functional disorders it seems wise and expedient to include the following table:

TABLE II.

AVERAGE QUANTITIVE ANALYSES (MÜHLBRUNN).

Per 10,000 parts.

Potassium Oxide	1.264
Sodium Oxide	22.935
Lithium Oxide	.037
Calcium Oxide	1.846
Magnesium Oxide	.779
Strontium Oxide	.002
Iron Oxide	.008
Aluminium Oxide	.003
Manganese Dioxide	.001
Anhydrous Sulphuric Acid	14.122
Chlorine	6.140
Fluorine	.023
Boric Anhydride	.021
Anhydrous Phosphoric Acid	.002
Silicic Anhydride	.719
Carbonic Anhydride	22.006
Control Sulphate Estimated	61.798
Control Sulphate Determined	61.852
Specific Gravity	1.00527

TABLE III.

CHEMICAL COMPOSITION OF THE CLIFTON SPRINGS SULPHUR WATER.

Showing the various constituents, parts by weight, in 10,000 parts of water:

Potassium Chloride	.060
Sodium Chloride	.026
Sodium Sulphate	.428
Acid Sodium Phosphate	trace
Magnesium Sulphate	3.241
Calcium Sulphate	10.339
Lithia	none
Calcium Carbonate	2.876
Alumina	.015
Iron	trace
Silica	.076
Carbon Dioxide (C02)	.700
Hydrogen Sulphide	.110
(Equivalent to 1.665 cu. in. gas in one U. S. Gallon.)	

Reaction, slightly Alkaline.
Total Solids in Solution, 17.871.
Specific Gravity at 60° F., 1.002.

The foregoing records bearing upon the Carlsbad cure are taken from the Prize Essay presented by Dr. Adolph Ritter, and published by the Town Council of Carlsbad in 1909, so that they must be accepted as an authentic exposition of the claims advanced for the curative value of these mineral springs. The table relating to the chemical composition of the Clifton Springs is copied from the pamphlet issued by the Sanitarium located there, founded by the late Dr. Henry Foster in 1850.

EMPIRICISM THE BASIS. — As indicating the difficulties in presenting a scientific basis for the employment of Carlsbad waters and to render the indications for their use more easily understood, Dr. Ritter conscientiously admits his inability, in the following words: "It must be stated at once that the best that can be offered in support of our views is a well-founded empiricism. This is all that we are able to offer to-day in support of our views. However, this empiricism is a century old. It has matured in the traditional accounts of the art of the use of mineral springs, and always possesses that advantage over the best explanations for their mode of action that these explanations leave something missing, which medical experience only can bridge over."

An effort is made to "bridge over" the hiatus by a discussion of the influence which the salts and metals (contained in the water), exercise upon human metabolism, admitting that "there has been no want of well deserving endeavors to explain this influence," and "that these researches are only in their initial stages.

We have further to admit, that we have scarcely reached such a stage, that we are able to profit from the physiological value of these processes, to say nothing of their importance in the pathologically altered metabolism."

In support of the importance of the mineral salts, authorities are cited, Liebig, Beneke, Voit, Forster, Bunge, Köppe and others, all going to show "that only a small loss of salts causes a decline, and eventually the death of the organism due to "salt hunger," special stress being laid upon Voit's experiments with sodium chloride, or common salt which—"of all the body salts, passes most rapidly through the body."

THE CHEMICAL OR PHYSIOLOGICAL EXPOSITION.—In consequence of the lack of scientific data, coupled with the deductions incident to tradition—covering a period of a hundred years—the exposition is ambiguous and extremely unsatisfactory. With correct information regarding the pathological changes resulting from magnesium infiltration, the explanation of the Carlsbad cure is exceptionally interesting and remarkably clear. A cursory glance at the appended tables will show that we have to deal with but few essential inorganic constituents, practically potassium, sodium, calcium and magnesium cover the entire list, the other products, lithium, strontium, manganese, iron, silica and aluminium being found in such infinitesimal quantities that their probable value may be neglected. Sodium sulphate is an important medicinal ingredient, as will appear later, but sodium chloride should be regarded as merely incidental. In fact, a study of the calcium and magnesium content is quite sufficient for our present purpose. Referring to Table II, it will be noted that we have a considerable percentage of anhydrous sulphuric acid, although calcium and magnesium occur in comparatively small amounts. The presence of magnesium oxide should not be overlooked.

From a physiological standpoint, we can legitimately assume that the Carlsbad water would be adapted to the treatment of advanced age or premature senility, due to magnesium deposits, properly classified under the head of "magnesium united with calcium." Hence, the administration of sulphuric acid would promote dissociation of the calcium and magnesium, while the large amount of carbonic anhydride would complete the chemical change by converting the resulting calcium sulphate into the carbonate, the magnesium oxide being also soluble in weak solution of carbonic acid.

Evidently, undue importance is placed upon the inorganic constituents of the Carlsbad waters as reconstructives, this statement being fully confirmed by the class of patients which derive benefit from their use. We never hear of children being taken to Carlsbad, nor do we learn that these waters are considered beneficial in the treatment of nervous diseases, and it appears to attract only chronic cases where all the evidences point to magnesium infiltration of the third division according to my classification. Still, there is no doubt of the distinct advantages of the Carlsbad cure for patients coming under the second division, where derangement of the nervous system has been brought about through chemical transformation with deposits of magnesium oxide in the nerve structures. However, the lack of calcium in these waters would preclude their employment, except temporarily, in this class of disorders, because there would be no surplus calcium found in the water to replace the depleted calcium content of the cellular structures—an interesting fact which will be brought out more fully when considering the class of cases to which the Clifton Springs is adapted.

ILLUSTRATIVE CASES.—An incident which occurred some five years ago is recalled to illustrate the correctness of the deductions already advanced. A medical acquaintance, in the course of our conversation upon the subject of magnesium infiltration, spoke of his father, then eighty-six years of age and apparently in good physical health. He said it was extremely sad to notice that his father was showing distinct evidences of failure, incident to his advanced age, and he was very much interested to learn if the magnesium infiltration or crystallization could be arrested. He said his father was losing his ability to walk, that his steps were rather uncertain, that he could not always follow the direction he wished to go; he also said, while he was quite active mentally, there had recently appeared symptoms of failing memory—he was unable to carry on a conversation consecutively and would suddenly interrupt a discussion by introducing a subject entirely foreign to that under consideration. When questioned about it he would say, "Oh yes, but you know I am getting old and don't remember."

The suggestion was made that the patient should take small doses of aromatic sulphuric acid, well diluted, an hour after meals, when the contents of the stomach are normally acid, and after this treatment had been continued for a week or ten days, the chemical character of the medication should be changed, the alkaline-saline being substituted. This preparation is taken in the form of an effervescent drink, and of course, supplies the system with the carbon dioxide, containing lithia, together with equal parts of the sulphate of soda and phosphate; it flushes the intercellular spaces, alkalinizes the blood and makes the cells work under approximately normal conditions.

As a result of this treatment, the patient made a complete recovery and I learned six months ago that my medical friend attended the celebration of his father's ninetieth birthday.

An interesting occurrence took place about a year after the above mentioned treatment had been conducted. The patient was quite an enthusiastic horseman and concluded to take a young colt out along with another well broken animal to begin the work of breaking the colt to harness. Unfortunately, the colt became frightened and his mate concluded to join him in a full-fledged runaway. While under full headway, the old gentleman concluded that he would steer his team off the main road, and he had not gone very far in the side track before he struck a moderately wide ditch where the temporary bridge had been washed away. The horses jumped the ditch, the front wheels of the wagon lodged, and when the team broke loose, the rear end of the wagon was tipped over on to the driver, leaving him firmly pinned under. A couple of men in the vicinity, who had witnessed the runaway, went to his assistance and succeeded in getting him loose from the debris, when it was found that he was practically uninjured; later, he mounted one of the horses and led the other home.

This was a case which would have derived benefit from the Carlsbad treatment, and it will suffice to

demonstrate that we can determine in advance whether or no it is advisable to send a patient there for the cure. In this connection also should be mentioned the striking fact that the Carlsbad waters are not beneficial because of their inorganic constituents, but rather on account of their chemical action upon the abnormal deposits within the cellular structures of the human body; their function in metabolism is that of elimination, as alteratives.

In illustration or explanation of the above statement, a peculiar and at the same time a notably instructive case came under observation six or seven years ago, as follows

A medical acquaintance told me that he expected to be called in consultation where he did not know what to do. He had talked with the medical attendant and accepted from the family through him an invitation to act as consultant. It seems that the patient, nearly sixty years of age, had been confined to bed for several months, apparently suffering from great debility, although the vegetative functions appeared to be fairly well performed. At my friend's earnest solicitation, I suggested that he prescribe the aromatic sulphuric acid and advise the patient to drink freely of carbonated water, and as a result, the patient, a week later, created a sensation in the neighborhood by appearing on the street, having made apparently a fairly complete recovery.

In this instance, we have a direct, indisputable and convincing demonstration of the claim already put forward, namely, that the beneficial effects of the treatment were due entirely to the chemical changes produced within the living tissues. This, of course, is diametrically opposed to the theory of the Carlsbad cure, but it is nevertheless the scientific explanation, or otherwise it would have been impossible for the writer to exercise that exceptional prevision which enabled him to decide upon the proper treatment without a personal investigation. Contrary to the statement of Dr. Ritter, it shows that we are now, even at the present time, able to "profit from the physiological value of these processes," and at the same time our studies in metabolism enable us to understand the demands of the organism in "the pathologically altered metabolism."

These cases, by no means, come under the category of "salt hunger," since the exposition of the morbid complexus from a chemical viewpoint discovers the scientific solution of the problem and proves beyond peradventure that we have to deal with super-saturation, a pathological status which is amenable to medication so long as the functional integrity of the cellular structures remains unimpaired. The question of cellular activity, determined by the reactions, is one which can only be settled after elimination of the deposits, magnesium dissociation, by chemical decomposition, or according to the law of mass.

Indications for Carlsbad Water.—In the pamphlet before us, Chapter VI, is headed "Indications for the Use of the Waters in Carlsbad," we find a running commentary covering a number of well known diseases in which it is claimed "we can expect the Carlsbad cures to lead to good results." Disorders of the stomach and intestine, characterized by acid catarrh, are mentioned along with gastric ulcer, nervous dyspepsia, diarrhœa, chronic constipation, and along with this we have disorders of the liver, jaundice, cirrhosis (hardening), gall-stones together with gout and the uric acid diathesis. These disorders are almost invariably due to involvement of the nerve supply and arise consecutive to acid excess, the magnesium deposits interfering with or hindering the uninterrupted transmission of nerve impulses. As a consequence, we have the acid catarrh and a long train of symptoms, both acute and chronic, which manifest themselves from time to time with or without indiscretions in diet or undue exposure, and what is more to the point, they are easily recognized and readily amenable to the treatment here indicated for the correction of magnesium infiltration —by restoring as far as possible the normal alkalinity of the blood, at the same time taking the necessary precautions, by way of internal medication, which are demanded to secure magnesium dissociation.

In the treatment of obesity, of course, the diminished food supply permitted, together with the purgative action of the water and of the Carlsbad salts, we should naturally expect that the system would consume the surplus fat of the body, but from a careful perusal of this paragraph, it is clear that such effects cannot be counted upon; nor does the Carlsbad cure always effect reduction in weight, a circumstance which may be understood by referring to the investigations of Boehm relating to the irregular transportation of starch in certain plants when lime salts were absent from the culture solutions.

The Carlsbad cure is also advocated in the treatment of the usual disorders of the kidneys and is especially recommended in catarrhal affections, the drinking-cure being supplemented by suitable local treatment. In addition to this it is recommended for neuralgic affections associated with gout and diabetes as well as diseases of the skin and in all these instances, the scientific aspect of the treatment, it will be seen, rests entirely upon the general principles outlined above. In view of these indisputable, practical and demonstrable facts, it will not be necessary in the future for the advocates of Carlsbad waters to offer the apology advanced by Dr. Ritter, "Like every medicament, mineral waters also can by prudent use or by abuse become either a good or a bad implement in the fight against disease."

Magnesium United with Calcium. — Evidently the Carlsbad cure is practical and successful in the case of various disorders coming under the head of the third division of the proposed classification, magnesium united with calcium. It is a logical deduction to assume that the disorders in which the Carlsbad waters are recommended are only such as may be expected when we understand the chemical basis of the treatment, and further, the treatment of these cases upon this principle affords convincing proof—indeed, the evidence is cumulative. For example, in disorders of the stomach and intestine caused by acid catarrh, there can be no doubt as to the correctness of the views here advanced, because this morbid complexus leads either directly or indirectly to other kindred manifestations, such as gastric ulcer, nervous dyspepsia, diarrhœa, chronic constipation and later, gout, rheumatism and uric acid diathesis. Substantially the same is true in respect to disorders of the liver, such as jaundice, gall-stones and interstitial inflammation. In disorders

of the kidneys, while the Carlsbad cure has attained world-wide reputation, it seems in view of the facts here presented to be of rather doubtful utility, even as a temporary expedient, because of the irritation set up in these delicate structures by the sulphuric acid along with the increased in-take of common salt. The same is true in regard to the employment of the Carlsbad cure in neuralgic affections, diabetes and diseases of the skin; in fact, the views hitherto held regarding the advantages to be gained are destined to become obsolete—in consequence of their inutility and parallelism with veterinary practice.

Clifton Springs.—A glance at the chemical composition of Clifton Springs water shows a marked preponderance of calcium salts, as compared with Carlsbad water, indicating at once that its utility must be due to other factors than the contained mineral constituents; also, that the class of cases to which it is adapted must be distinct from those seeking the Carlsbad cure. In addition to this should be noted the important fact that it contains no element which could be considered of value to a patient whose peculiar malady required first, last and all the time, the production of purgative effects, there being only a small percentage of Epsom salt (magnesium sulphate, 3.241), and little more than a trace of Glauber salt (sodium sulphate, .428), with an infinitesimal of common salt (sodium chloride, .026).* It is alkaline in reaction, and anhydrous sulphuric acid is entirely absent, hydrogen sulphide being found instead.

Analysis of the Medicinal Properties.—A study of this water with the object of determining its probable effects upon metabolism should prove exceptionally interesting and instructive to the public, both lay and professional, because of the broad claims which can be made for its therapeutic value in mitigating or counteracting the depressing effects of magnesium infiltration. And not only does the investigation enable us to demonstrate the possession of these singularly valuable properties—it likewise reflects the general character of the measures to be adopted as a preventative and a precaution against the invasion of disease.

First in importance is the alkaline reaction. All disorders are characterized by acidity, or acid excess, a constitutional deviation which always involves the blood to a greater or less extent, diminishing its oxygen-carrying capacity, and lessening oxidation or the consumption of waste, thus interfering with elimination. Any disturbance in the physiological equilibrium has a retarding effect upon metabolism, a phenomenon strikingly exhibited in all forms of disease when treatment is conducted with a view to correct or neutralize the abnormality now recognized as acid excess. As well might we expect a man to work without food or fresh air as to demand continuous and persistent activity on the part of the cellular structures under abnormal reactions and in the presence of effete, decomposing and poisonous animal refuse—for such is a condensed epitome of the pathological condition in disease. Under these circumstances, and in view of the fact that the medical profession has so far failed to grasp the vast significance of maintaining the physiological equilibrium in disease, the wonder is that bacterial infection should not be universal—and the population decimated.

Next in order comes the calcium content, together with the magnesium, not enough of the latter to do more than meet the legitimate physiological demands of the system, especially the brain cells, and sufficient of the calcium sulphate (gypsum), and calcium carbonate (chalk), to prevent or correct any "nervous" manifestations incident to magnesium dissociation as a result of the augmented alkalinity of the blood from drinking the water. Of course, reasonable care should be exercised in selection of the dietary, although this must be regarded as of secondary importance when it is recalled that with perfect metabolism in respect to digestion and assimilation, these inorganic substances would properly be secured (obtained), in the usual manner. Their administration, either in this way, or separately prepared and employed medicinally, secures their introduction into the body fluids as colloids, thus insuring immediate assimilation, a claim which is made advisedly. In proof of this it should be added that when these inorganic substances are not demanded by the organism, there is lack of palatability, and when the salts are employed medicinally, the evidences of incompatibility are usually well marked.

Other inorganic constituents are not found in sufficient quantity to require special consideration, their presence being merely incidental—in common with various inorganic substances found in other waters, depending upon the character of the rock through which they permeate.

Finally, a brief reference to hydrogen sulphide, the "sulphur" factor in this water, a decomposition product appearing in the intestine along with others, such as indol, skatol, leucin, tyrosin, butyric acid, carbon dioxide and many others of like character, under apparently normal conditions as regards digestion. It is an error however, to assume that its presence is deleterious, although objectionable, since it enacts the role of a conservator, neutralizing acids and combining with other waste products to render them inert, thus promoting nutrition by aiding elimination. Where such conditions exist, sulphur water is palatable and will be drunk with avidity so long as it affords relief—and no longer, a statement fully born out in the case of neurasthenics suffering from lead poisoning, where the inorganic substance is gradually changed to the inert sulphide. Usually, however, magnesium sulphate is employed, thus adding a factitious disorder to that already established. Sulphur water is always acceptable to those suffering from tin poisoning, also from copper, mercury and zinc, and with modern cooking utensils, there are numerous cases of this character presenting obscure nervous phenomena which baffle the skill of our most expert clinicians. In no instance are the advantages of sulphur more notable than in the treatment of suppuration, boils, abscesses and carbuncle, where we have to contend with bacterial

*(Note:—Carlsbad water contains more than fifty-four times as much sodium sulphate and nearly three hundred and ninety times as much sodium chloride as Clifton Springs, the former acting as a laxative or cathartic, according to the dose administered, the latter creating an unnatural thirst, both considered of doubtful utility in modern practice, and in large doses absolutely condemned by physicians who understand and appreciate the delicacy and susceptibility of the cellular structures entering into the make-up of the human organism.)

infection engrafted upon defective or impaired metabolism, invariably a prerequisite of bacterial invasion. As further proof of the wide range of sulphur and its neutralizing effect upon the most virulent poisons may be mentioned its specific action upon ivy poison. For many years the writer has employed a sulphur salt in all such cases with the most gratifying results, relief from itching being afforded usually within a few hours, with complete recovery in the course of a few days, or as soon as the inflamed skin has had a reasonable time to heal.

Illustrative Cases. — A lady, aged thirty-six, married and mother of two children aged ten and twelve years, had suffered for seven years or more from progressive neurasthenia, being in constant dread or fear of insanity, a malady which had appeared in her family from time to time. Highly educated, intelligent, ambitious and energetic and apparently in robust health, she had faithfully complied with the advice of her medical attendants to exercise her "will power"—whatever that may mean to the neurasthenic—to the end that her mind should be freed from this abnormal fancy. Nevertheless the most earnest dialectic solicitations proved valueless, medication had demonstrated its utter uselessness, likewise a foreign residence and psycho-therapy had been tried in vain—the "nervousness" became more pronounced, obstinate constipation and persistent insomnia being the dominant factors.

To complete the record in this case it should be stated that the patient was considerably overweight, the flesh being abnormally firm, evidently due to magnesium infiltration affecting the trophic nerves —the nerves which are supposed to govern nutrition, and this together with the constipation and insomnia were quite sufficient to determine the physiological or chemical basis of treatment.

For the relief of magnesium infiltration affecting the trophic nerves nothing is superior to the Nauheim bath, and as the patient was favorably disposed toward sulphur water, she was advised to take the baths at Clifton Springs, drinking the water freely, and in order to hasten recovery, she was also advised to continue alkaline-saline treatment, supplementing the alkaline spring water, the acidity of the salivary and cutaneous reactions both being well marked. As a result of treatment, combined with a limited rather than a restricted dietary, this patient lost weight almost daily and perceptible improvement was manifested from week to week. At the end of six weeks when the weight had been reduced over thirty pounds and the patient was walking ten miles a day, with sleep and bowel movements normal, the treatment was discontinued, a serious mistake, because it is impossible to effect metabolism permanently in such a short period of time. At least three months should be allowed for recovery from the "habit" in this class of cases.

A young man, aged twenty-seven, walking with crutches, presented an interesting and instructive case of magnesium infiltration. He gave the following history: He had been under treatment for a period of thirty-one weeks, apparently the result of an internal operation did not prove successful, and as a result, abscess which "pointed" in the right groin. The first he was taken to the hospital where a second operation was done. The wound finally healed, leaving a considerable area of thickened and painful tissue, so much so that he was unable to bend the leg at the thigh without great pain. Tenderness in the hip-joint was so great that the slightest movement caused pain at the head of the bone; pressure over the joint externally was also painful so that he had to be waited upon, being unable to dress and undress himself. At the time of the first visit, he had been away from the hospital about two weeks, although during his stay in the hospital, five weeks in all, no medicine had been administered, a fact which is to be recorded in favor of the medical attendants, because they knew of nothing which could benefit him.

Treatment in this case was conducted for the purpose of promoting absorption of the plastic exudate which had involved the muscles, preventing movement, and in addition to this it was necessary to correct the pronounced acid excess which had resulted from inactivity coupled with the bacterial infection incident to the abscess formation. The patient had suffered part of the time from night-sweats and even at the first consultation he reported that any exertion caused profuse perspiration. This acid excess was readily determined by employing the blue litmus paper, testing the saliva as well as the perspiration. To correct the suppurative tendency, he was given the usual medicament which develops hydrogen sulphide (calcium sulphide) together with alkaline-saline, and as a result the unnatural hardness began to subside. The pain in the hip-joint disappeared in the course of a few days, although the joint still remained tender, but the patient experienced quite a fright, owing to the swelling and numbness of the leg which supervened. However, it was explained to the patient that this was really a conservative process and would gradually subside. The acid excess persistently continued, showing that nature was unable to provide the necessary lime salts even with a good appetite, and as the suppurative tendency had been corrected, the treatment was modified by the substitution of calcium carbonate or "vitalized" chalk. At the end of six weeks, this patient had discarded his crutches, was using only a cane when he took long walks, and within a few days he returned to his former employment as an operative in a factory, this happy result having been secured and the cure complete after four consultations.

Magnesium Oxide. — These two cases are fairly illustrative of magnesium infiltration by chemical transformation, coming under the second division of the classification adopted. In the first instance, there was an accumulation, or shall we say, a deposit of magnesium oxide in the nerve structures, obtunding sensation, interfering with nutrition and predisposing to the abnormal deposit of adipose tissue or fat. A similar condition involved the nerve supply of the intestinal tract, interfering with the normal activities of the cellular structures and producing the obstinate constipation, both conditions being favored by leading an inactive life. It is in such cases as these that the "rest" treatment is recommended with a restricted or limited dietary, in the expectation that the fat will be eaten up, but the advocates of this line of treatment scarcely realize the superficial view which they take, in view of the well known fact that magnesium oxide is soluble in weak solution of carbon dioxide. Thus, keeping the patient in bed on a low diet has its ad-

vantage—when the medical attendant does not understand the chemical relations and is unable to conduct treatment for the purpose of dissolving these inorganic deposits.

In the second case, we have first to deal with bacterial infection in connection with the abscess, probably an abscess of the psoas muscle, and as in all such instances where we have to contend with suppuration, an acid condition attends, the physiological equilibrium is upset and so far, in our medical textbooks, there is no treatment available except the employment of so-called "tonics." In fact, this line of treatment was recommended to the patient; he was advised to take treatment for a few months in another hospital, and as an inducement, he was told that he might expect to make a partial recovery in the course of a year. Confidentially, the patient's sister was told that her brother had hip-joint disease, that it was tubercular and recovery very doubtful.

A word in regard to the alkaline-saline treatment together with addition of chalk. The former restored the alkalinity of the blood, flushed the intercellular spaces and enabled the body cells to perform their functions under approximately normal conditions, while the calcium carbonate supplied the inorganic substance which the acid had filtered out, and besides, according to the law of mass, the magnesium oxide was reduced, changed or modified to such an extent that it no further acted as bar to the uninterrupted transmission of nerve impulses.

Radio-Activity.—As a result of recent investigations and further light upon the various properties of radium, it has been found that curative mineral waters are generally radio-active; hence, their value may depend in part upon this principle, and since bottling and transportation would lead to loss or dissipation of the emanations, those seeking benefit should "stand by" at the fountain head. As an off-set to this claim may be mentioned the development of a new industry, that of artificially charging mineral waters with the emanations, not hap-hazard, as found in nature, but with certainty and precision. In addition, this industry includes also the preparation of artificial mineral waters, for drinking, bathing, etc., properly charged with radio-activity, so that the outlook for the patient is favorable, whatever his decision.

Radio-activity—the transformation of atoms(?), is an exceedingly interesting topic, from the viewpoint of metabolism, and although imperfectly understood, deserves consideration in the present discussion. Kreuznach, Germany, is credited with the honor of establishing this new industry upon a commercial scale. The artificial mineral waters—containing the proper percentage of the various mineral salts—are prepared in bulk, when the desired degree of radio-activity is added by means of specially prepared brass cylinders, called "activators." The Radiological Institute of Heidelberg University, stands sponsor for the claim that no considerable dissipation of the emanations occurs so long as the water is not agitated—otherwise it loses its activity very rapidly. This latter observation might be studied in connection with the stimulating effect of sea air, sea-bathing, and the tonic effects of an ocean voyage, since both streams and mineral springs eventually discharge their contents into some of the large bodies of water, carrying with them more or less of the inorganic constituents of the soil through which they permeate, and probably radium amongst the number.

Physiological Action.—Since radium has been employed in the treatment of numerous diseases experimentally without any definite idea of what it is expected to accomplish, and without a knowledge of its effect upon the living tissues, normal or diseased, a brief reference to its physiological action will prove interesting and instructive.

According to Sir William Ramsay, there are three kinds of rays emanating from radium, "alpha," "beta" and "gamma." The first can be bottled, the alpha rays being due to a gas which cannot escape unless the stopper of the bottle is removed. The beta rays are also particles, but very small and moving with enormous velocity; the gamma rays are not particles, but mere waves in the ethereal medium which surrounds us—analogous to light. In answering the question, "How long would radium last if it were always changing into gas?", Sir William replies, "Forever." The amount given off is always proportional to the amount of radium present. In addition, he says, "We can tell how long it will take radium to half-change into the emanations, and the time we have just measured in the laboratory is 1750 years."

The classical researches of Rutherford throw additional light upon this topic. He says that the alpha rays consist of positively charged flying particles, these particles being of atomic dimensions, flying through the air at the rate of about twenty thousand miles per second(?). By means of the electrometer, he has succeeded in catching these particles one by one; in other words, he has captured and demonstrated the individual atom—at the rate of about thirty each minute.

The method by which these results were attained is referred to as "a most attractive study in ballistics." A firing-chamber contains the radium and between this and the target-chamber is placed an extremely thin mica plate. As the infinitesimal projectiles enter the detecting-chamber through the window, the electric equilibrium of the contained air is upset, which causes the electrometer needle connected with it to jump—there is a needle-jump on the entrance of each particle.

In conducting these researches there was developed an extremely significant, scientific fact, relating to radium emanations, namely, that these particles possess the peculiar property of increasing the electrical conductibility of the air, and this, it will be unnecessary to remind the reader, affords an explanation of its value in the treatment of various diseases, such as gout, rheumatism, superficial tumors and various skin diseases. At the same time, this peculiar property will account for the great reputation which radium has attained in the treatment of obscure nervous affections which were really cases of magnesium infiltration, the tissues impregnated with magnesium deposits being practically insulated. Exposure to radium emanations immediately stimulates the cellular structures by augmenting the electrical conductivity of the tissues, including nerve tissue. This explanation also accounts for the failure of radium in cases of deep-seated tumors, such as cancer, because the penetration of

the emanations is not sufficient to produce the desired effect upon electrical conductivity of the deeper-seated structures. Like all other remedial measures, however, success or failure in the employment of radium, both internally and externally, hinges upon the precautions taken to insure the normal alkalescence of the body fluids and tissues, as otherwise but temporary benefit can be expected.

Atomic Nature of Radium. — The existence of alpha particles had previously been suspected. For example, on placing a small portion of radium before a screen of zinc sulphide—in the dark—scintillating stars of light, like a swarm of fire-flies, appeared on the screen, supposed to be due to the impact of individual particles, and now Rutherford's investigations confirm the working hypothesis.

That alpha particles are atomic has also been proven by other scientists. Thus, Royds introduced into a vacuum a small glass tube containing radium, the glass being so thin as to permit emanations—in the form of alpha particles—with the result that after two days there appeared in the vacuous space between the electrical terminals within it, a delicate, phosphorescent light, shown by spectroscopic examination to be helium. It remained for Dewar, however, to determine the volume of helium (gas), produced by one gram of radium, and by means of Rutherford's counting method we arrive at the approximate number of atoms, or alpha particles, in a cubic centimeter* of helium under standard conditions, 25,600,000,000,000,000,000, a number in remarkable accord with that long accepted by scientists as representing the ultimate chemical particles in a cubic centimeter of gas.

This slight degression relating to the atomic constituency of radium would be pardonable if it did nothing more than emphasize the vital importance of studying metabolism in the light of recent scientific investigation, but a special significance is attached to this discussion, since the atom is not the ultimate in nature. Instead of being simple in constitution, atoms are actually highly complex, electrically charged particles, containing negative as well as positive electricity, and from the present outlook, final dicision awaits our efforts in outlining and plotting the domain of electricity itself. Not only the human body, but every substance whatsoever presumably consists of ultimate particles, still more infinitesimal than atoms, possessing peculiar, definite and demonstrable properties which enable us to claim for them both electric and chemic reactions. How, then, shall we reconcile the crude methods in treating disease in the infinitely delicate living structures with which we have to deal?

Amebic Colitis is due to the Entabema hystolytica, a specific organism, symbiotic and probably waterborn. There is no endemic center, state W. E. Deeks and W. F. Shaw (New Orleans Medical and Surgical journal, July, 1911). Immunity does not seem to exist. Age, locality, nationality or occupation play no part in the etiology. The lesions are characteristic. The bismuth-milk-salve treatment is curative. Amebicidal irrigations are useless. In extreme cases A. B. Herrick's method of surgical interference is indicated.

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*Note. — A centimeter is approximately five-eighths of an inch.

REPORT ON THE USE OF MECHANO-THERAPY IN CATARRHAL APPENDICITIS.

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Introductory Remarks. "By *mechano-therapy* we understand the mode of treating diseases by movements.

The movements may be either *active* or *passive*.

If the movement is executed by the patient's own will and power, it is called active.

A passive movement is performed either with or upon some part of the patient's body by a will and power other than the patient's.

In the study of mechano-therapy we will find two distinctively separate classes—viz.: *Medical gymnastics* and *massage*. By medical gymnastics we understand that branch of mechano-therapy which deals with active and passive movements of the various joints of the body. Massage is a series of passive movements executed on the patient's body in a variety of ways." (Author's "Textbook of Mechano-Therapy," W. B. Saunders & Company, 1904.)

To explain in details the effects of mechano-therapy is outside the scope of this paper. We will only draw attention to the points taken by E. C. Thompson (Boston Medical and Surgical Journal, April 7, 1910): . . . "The remedial effects of massage are increased elimination, vascularity and metabolism; absorption of infiltrations and exudations; improved nutrition; relief of congestion, and sedative effect on nervous system. In addition to these, adhesions are attenuated, stretched and sometimes broken down."

That scientifically given massage and medical gymnastics are the foremost therapeutic agents to combat chronic constipation is recognized to-day beyond dispute.

In the majority of cases suffering from appendicitis we will find a previous history of indigestion and chronic constipation.

With few exceptions appendicitis is of cecal origin.

A. Rabagliati, in "Air, Food and Exercises" (William wood & Comp., 1903) states, that most cases of appendicitis are of cecal origin and caused by overeating and constipation.

Charles Lyman Greene ("Medical Diagnosis," P. Blackiston's Son and Comp., 1910) recognizes the fact that an indiscreet diet often is the cause of catarrhal appendicitis.

"Let fecal matter, indigestible or decaying food, or foreign bodies, gather in the cecum, and such an accumulation is more likely to produce a temporary catarrhal inflammation and be a nidus or focus for different pathogenic bacteria. This inflammation and these germs will easily extend to and involve the appendix, which, by its peculiar structure, invites inflammation and is ready to absorb and retain pyogenic material; or traumatism or muscular strain may cause a local hyperemia, which, extending to the appendix, so to speak, opens the door for different bacteria." (Author's article on Appendicitis, The Medical Council, Feb., 1910).

Any physician who takes sufficient pains to familiarize himself with the etiology of catarrhal appendicitis, with its pathology, and with the general and local effects of mechano-therapy, undoubtedly must reach the conclusion: That in said manual treatment we

have a most valuable both prophylactic and curative agent to be used in our fight against this so prevalent and treacherous disease.

In the year 1890 I treated by massage the first time a patient recovering from an attack of catarrhal appendicitis. The object of the treatment was to prevent any recurrent attack. The treatment was successful, but unfortunately I was unable to follow the history of the case. Since that date I treated several similar cases, but it was not until 1900 I had the opportunity personally to care for and watch the patients from the very beginning of the first attack and to follow their history.

Below I offer the report of eleven cases thus treated.

First Attack	Sex	Age	Occupation	Recurrent attacks up to present day
1900	Male	21	Tailor	none
1901	Male	24	Woodworker	none
1901	Female	22	Factory Girl	none
1903	Male	33	Ironworker	none
1903	Female	18	Millhand	none
1903	Female	29	Weaver	none
1904	Female	6	School Girl	none
1905	Female	40	General Housework	none
1906	Male	22	Woodworker	none
1906	Female	17	Telephone Operator	none
1907	Male	41	Carpenter	none

In my work I was greatly encouraged by reading several articles by George Hünerfauth, of Homburg, in "Münchener Medicinische Wochenschrift," 1889, in which he reports fifty-three cases of catarrhal appendicitis successfully treated by him in a similar way.

Douglas Graham, of Boston, writes in "Manual Therapeutics" (J. B. Lippincott Comp., 1902): . . . "Observations are beginning to indicate that in the incipient stages of appendicitis the attack may be warded off altogether, and the patient get well by massage of the abdomen, especially over the region of the cecum."

The Treatment. As soon as the diagnosis of catarrhal appendicitis is made, the patient is put on the medical treatment outlined by the author in "The Medical Council," February, 1910.

After a week, when the acute symptoms have subsided, the manual treatment is started, the technique of which is as follows:

The patient is placed in the dorsal posture, as to relax the abdominal muscles and viscera. The manipulations consist of digital kneading, carefully performed, of the cecum and in the region of the appendix; deep digital kneading of the rest of the colon; digital vibration and pressure of the whole colon; and finally palmar stroking of the whole colon.

Give a similar séance daily, extended fifteen minutes for the first week; then add light ulnar percussion along the colon, subsequent to the kneading. Continue this treatment during the second and third week, with one daily sitting of about twenty minutes' duration.

During the fourth, fifth and sixth week, give a similar séance every other or third day, as the case requires. As a rule mild cases require six weeks; obstinate cases two months.

Begin slowly and gradually increase the force of the different manipulations. Don't give this treatment to a patient on an empty stomach, and let one hour elapse after the last meal.

During the course of this manual treatment let the patient drink two quarts of still water during each twenty-four hours. Restrict the diet to fresh fruits and stewed fresh vegetables, broiled or roasted meat, baked fish, cereals and butter. Allow some bread; the dried varieties as toast, crackers, German *zwiebacks* or Swedish *Knäckebröd* are to be preferred. Fresh milk and eggs may be eaten sparingly. Sour milk, buttermilk, and koumiss are excellent. Avoid pastry and highly seasoned dishes.

Give a high rectal irrigation of hot normal salt solution once daily for two weeks, then every other or third day.

Once weekly give the patient a pill of blue-mass and podophyllin; no other medicine is to be employed except if especially indicated.

After the patient is discharged instruct him to be careful in regard to dietary and not to overeat.

Finally insist upon him taking a cold rub, or cold sponge, every morning, followed by following medical gymnastics:

1. *Active chest-lifting,* — standing posture: repeat three to six times.

2. *Active rotation of the trunk,*—standing posture with separated feet and each hand resting upon the corresponding hip, with the thumb posterior and the rest of the hand anterior; repeat six times and then reverse.

3. *Active flexion and extension of the trunk,* — standing posture with separated feet. The arms abducted and parallel, the forearms extended, and the palmar surface of the hands directed toward each other. Let the patient perform flexion to its full extent and keep the arms in same plane as the head during the whole movement. Repeat four to six times.

4. *Active expansion of thorax with extended arm,* —standing posture. Repeat four to six times.

Instruct the patient to execute the movements slowly, and to rest a few moments between each movement.

The time for the exercise should extend about twenty minutes. Then let the patient drink half a pint of hot water and finally eat his breakfast.

Let him carry out these instructions about one year.

A person, who once had an attack of appendicitis, should never indulge in heavy wine, brandy, cordials, ale or porter. But, if he is accustomed to alcoholic beverages, some good brand of Scotch whiskey well diluted with water, or some light wines or beer to sip slowly with his meals will not produce any harmful effects.

Having once suffered from appendicitis a person always, in the future, should wear loose-fitting garments.

Conclusions.—It must be understood that above treatment is not applicable in appendicular abscess, or in cases where already pus is formed.

Above outlined manual treatment relieves the congestion of the appendix, absorbs surrounding infiltrations and loosens adhesions of the appendix, the omentum and the cecum. It increases elimination, and relieves constipation, indigestion and tympanitis, which are more or less associated with this disease. It

strengthens the abdominal muscles, increases the abdominal circulation, and the intestinal peristalsis.

It must be undertaken only after careful diagnosis, carried out fearlessly but carefully and perseveringly, and modified according to sex and age, and in accord with any existing complications.

The reason why this manual treatment is not so much in vogue as it undoubtedly deserves, is because an appendectomy is more brilliant; because the average physican possesses insufficient knowledge of mechanotherapy so as to treat his own patients; and the number of skilful medical gymnasts is limited and confined to a few larger cities; and finally because medical teaching of to-day tends to treat appendicitis only surgically.

But in spite of this teaching, is it not a fact that a certain percentage of catarrhal appendicitis recovers without surgical interference? Can it be denied that there exists a certain percentage of death-rate and needless risk, even if low, in connection with appendectomy for catarrhal appendicitis? Must we not acknowledge that a certain percentage of patients, suffering from catarrhal appendicitis and having had their appendix removed by the surgeon, returns to the physician, complaining of pain and tenderness in the appendicular region, and annoying, painful indigestion, constipation and tympanitis?

THE HOME TREATMENT OF TUBERCULOSIS.

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Most consumptives have to be treated in their homes and by their family physicians. It has been computed that all the sanatoria in existence can take care of but five per cent. of all the tuberculosis sufferers in existence. This puts the responsibility upon the family doctor to be very expert in phthisiotherapy. He must, to this end, take every possible means to establish an early diagnosis, recognizing the gravity of the disease, and the fact that with each day's delay in treatment the patient's chances of regaining health are progressively jeopardized. Here the physician must show himself a masterful man; knowing that benefit is a matter of months, arrest of tuberculosis a matter of years, cure of several, perhaps many years, he will lay out the course accordingly. His must be the generalship, the recognition of the many elements to be considered. and the realization of the material at hand with which to fight the disease. The patient must be made to rest confidently upon his doctor's strength and judgment; and the patient's mind must become permeated with trust in his doctor's latent resourcefulness. The consultation must ever and unfailingly be an inspiration.

There has to be, for successful phthisiotherapy, something of a subconscious bond or compact to which sympathy will by the physician's contribution, and obedience that of the patient; the latter, especially by reason that he is consumptive, is weak of mind and body and lacking in reserve energy. He will ever need moral support and suggestioning of health and vigor, not only when he knows when he needs those things, but even more when he imagines that he does not—like many who need prayer not so much when they are unfortunate, as when they are prosperous and doing well (or think they are). We have to study the mental condition of the patient; to recognize that in many of these cases, especially of women, the emotions and the will are apt tc be unstable. We have to deal severely with frivolity (such as obtains among some young women consumptives to an almost ghastly degree); to encourage the despondent; with inexhaustible patience to instruct the ignorant. Our directions must be clear and definite; the patient must never be left in doubt as to what he is to do.

We have to explain the nature of the disease to the patient, it is criminal to speak mildly of an apical or of a pulmonary catarrh, and soothe the feelings of the patient, with the result that he or she may, through not understanding the gravity of the affection, be negligent, with fatal results. The family doctor shall not sleep o'nights any the better for remembering that a consumptive had said of him in the last weeks of her pathetic life: "If Dr. X had only told me the truth I might have been well to-day." For such an evasive diagnosis as this no consumptive will observe the rigid regiment essential to recovery; nor will such a patient renounce favorite habits and pleasures; nor his vocation if need be; nor give his time and money to achieve the cure; nor will he leave, if called upon to do so, his own people and his familiars.

The diagnosis of consumptive, if made early, is not discouraging; it is not now, as it used to be, equivalent to a death sentence; in all probability the conscientious and obedient incipient will get well, as will also many a case of fairly advanced tuberculosis. On being told the diagnosis the patient may (though not always) become dreadfully affected; enormous tact is then requisite. The patient will then look his doctor anxiously in the face; and the latter must compose his features to a clear-eyed, calm and gentle sympathy, and his voice must be both firm and kindly while he is meeting the patient's quivering lips, the white, tense, dilated nostrils and the swimming eyes, over which he presently puts his trembling fingers.

However, upon this initial shock, the psychology of the consumptive is almost invariably that of the volunteer soldier. When the idea of going into battle first confronts the latter, he will have a sense of terror, no matter how established his courage may be; but presently this emotion will certainly give way to that of exultation and of a belief in ultimate victory in the fight which is now imperative. The patient must be obedient, and persistent in every detail of the treatment enjoined upon him. He will then be confident of his recovery—a state of mind happily prevalent among consumptives, who are proverbially sanguine and optimistic. The patient must be made to understand that his improvement and his ultimate recovery will depend largely upon his own behavior. He must consider, before he undertakes any business or other enterprise, how his chances of getting well will be affected thereby. He must make it a habit to converse with no one except his physician or his nurse concerning his illness; nor is he to adopt the multitudinous suggestions of his misguided friends. If he has lost his faith in his physician, he had better get another forthwith. However well the patient may consider himself, he must continue under his chosen doctor's observation until he is dismissed.

The fundamental principles of phthisiotherapy require:

1. The Disposition of the sputum.
2. Rest.
3. Fresh air and sunshine.
4. Pure food and drink in abundance.
5. The use of medicines as directed by the physician.

These principles are now so familiar that I will not dwell upon them; but will proceed to minor but hardly less important considerations.

The subject of the sexual tendency with regard to tuberculosis is as important for the physician to consider, as it is difficult to discuss with the patient. Obviously, in the management of the consumptive every element which would tend to weaken the system should as far as possible be eliminated. "He that thinketh in his heart" upon sexual things has already committed the equivalent at least of the sexual act. For it is a physical fact that the thought itself has resulted in the secretion of semen, the system having thus become impoverished to the extent of this abstraction from its tissues. The consumptive is rather more prone to sexual excitement than the average individual in health. Many observations are made in explanation of this insalutary phenomenon—the lack of occupation; the many hours passed in enforced idleness; the nervous tension and the general excitement under which many consumptives labor; the erethism which may be (and no doubt frequently is) induced by the high temperature and the influence of the tubercular toxins within the body; the superabundant sense of well-being which the forced feeding induces; the feeling, in many cases, that the disease is likely to prove fatal, and that life might as well be enjoyed to the full while it lasts. In such premises the physician must attend to it that susceptible patients have as few opportunities as possible to indulge secret vices.

Judicious bathing is important in phthisiotherapy; that sea of blood in and beneath the skin must be kept constantly purified. On general principles a daily sponge on rising, at least to the waist, followed by a brisk rubbing with a rough towel is essential. The bath room should be warm; and the water should not give a chill. Best begin with 95 or 90 F.; and reduce gradually until a lukewarm or cold bath may be taken with comfort. By such time a cold shower may perhaps be endured; vigorous rubbing always after the bath by an attendant if possible. There should be some rest after the bath—from fifteen minutes to half an hour. Once a week there should be a warm bath, with thorough cleansing; when there is much sweating soap and water should thus be used twice a week.

The scientific advantages of bathing are to enrich impoverished blood and to obviate stasis; to deepen inspiration; to enhance nutrition; to further metabolism; to eliminate excreta; to reduce temperature; to bring about a sense of mental as well as physical well-being. When there is hemoptysis baths should be omitted (certainly the daily ones). While the patient is lying down the various parts of the body should be cleansed and rubbed in succession. When also there is pleurisy, or after a night sweat, or when the temperature is below 97°, a judicious dry rub should be substituted for a bath. And during fever the bath is best taken in the afternoon rather than in the morning.

Baruch advises the following hydrotherapy in tuberculosis: After a thorough cleansing with soap and warm water a day is allowed to elapse. The patient is wrapped snugly in a thin blanket like a mummy (unless rectal temperature is above 100); he is allowed to lie thus half an hour or longer—until he perspires. In afebrile cases it may be necessary to cover with additional blankets, the object being to fill the cutaneous arterioles preparatory to being treated with water. The face is bathed with water at 50° F. Now the blanket is opened over the chest and abdomen; and those parts are rapidly and well rubbed with water at 75°. After drying the patient is turned on the abdomen and the back is similarly treated The patient is gently dried, dressed, and if afebrile, ordered into the open air for a gentle walk. Febrile cases are returned to bed. This treatment is repeated daily with reduction of two degrees of water temperature at each ablution until 60° F. are reached. Now the ablution is performed just as the patient emerges warm from the bed, as follows: Standing in a foot tub containing sufficient water at 100° F. to cover the feet to the malleoli, he receives a rapid friction bath with water at 90° F. (omitting the upper extremities) after which he is dried and sent into the open air if his rectal temperature is below 100. The water temperature is reduced daily two to five degrees until 60° F. are reached. Now the ablution is replaced by effusion, which consists of pouring four basinfuls of water at 90°, previously held in readiness, over the body. The patient standing in a foot tub, having the feet covered with water at 100° F., water is dipped from a vessel previously in readiness and poured with force over each shoulder and the back and chest. Rapid drying while standing on a warm towel complete the procedure. Beginning with a water temperature at 90, it is daily reduced a few degrees until 60 or even 50 are reached. This refreshing process may be repeated daily. In febrile cases the water temperature should not go below 65°.

The following is based upon Cornet, of Berlin: A sensitive patient, in the winter, begins with rubbings morning and evening, preferably by an attendant. He is put naked into a large, coarse sheet, and then rubbed with long, quick strokes, from head to foot, so that a strong glow may be brought to the skin. In a week or more the partial wrist rubbing is begun. The patient lies in bed and his trunk and members are rubbed with a wash-cloth wrung out of water (66° to 92° F.) until there is a ruddy reaction. Upon this the patient is covered again and rests for half an hour. Later, when the cutaneous vessels have begun to take on their normal functions, the full moist (or wet) rubbings are used with strong patients, especially in summer. The patient may be taken directly from his bed, and given the treatment upon an empty stomach; or weaker patients may have a glass of warm milk or tea half an hour before; or a short walk or a dry rub may precede, in order to induce a good reaction. The patient, entirely nude, is wrapped in a cloth wrung out (later wet) in five per cent brine at 90° F., so that it comes in contact with the body all over; and he is then rubbed down by an experienced man, with long powerful strokes, until there is an agreeable feeling of warmth over the entire body. A wet cloth may be laid on the head to guard against headache. The entire rubbing lasts but one or two minutes, after which the patient is again laid on a dry sheet and again rubbed.

He dresses without delay and goes out into the open air for at least half an hour. After his walk he breakfasts. Weaker patients go to bed for another quarter of an hour. The temperature of the brine is lowered one degree daily down to 70, 65 or even 60°. This full rub should be done quickly, expertly and energetically. Relatives and unskilled attendants should not undertake this work; headache, discomfort and chilliness may result. The douche can be endured only by the very strong; and it should be done in the physician's presence. The duration should be gradually increased from five to forty seconds; the temperature should be 90 to 95 or warmer. The patient must rub himself during the douche. After he is dried he dresses himself and exercises in the air. The douches are absolutely excluded in very irritable cases and those with much sputum. They induce forced breathing and may lead to sputum aspiration. The rubs do not serve to cleanse the skin and are no substitute for baths. They seem, however, to harden the body against variations in temperature. They are a neuro-vascular stimulant, improving the "peripheral heart," and affecting favorably the appetite, the nutrition and the mental condition. Thus Cornet.

It is very essential that the consumptive should have his exercises graduated by his physician; especially is this so of lung gymnastics. Judicious exercises will expand the lungs and increase much needed air-space. Indications against lung gymnastics are: subnormal temperature—one degree below; fever—no exercise at all if the temperature is 100, and bed inexorably if the degree is 101; rapid pulse and a tumultous heart; weight much below par; far advanced disease; fatigue or dyspnœa on exertion; when the sputum is blood-streaked; when there is a far advanced cavity or a dilated right heart. In consumption the organism is often on the verge of bankruptcy; and the bank may easily be broken by an excessive amount of physical exercise. Besides, excessive muscular action consumes energy and throws products of combustion into the circulation. In all such circumstances as these rest is essential; exercise may prove fatal.

When respiratory gymnastics are required of the patient the physician will assure himself there are hypertrophies, exostoses or other obstructions to free breathing, with the lips closed. The man or woman patient who, having this disease, must still work, should take every possible opportunity to rest; there must be no running, or lifting of heavy weights. Stooping should be avoided.

The patient's clothing should not restrict his neck or chest; it should not impede respiration. He should not wear constantly so much clothing that his skin will be kept moist with perspiration. Overcoats and wraps are to be used for outdoors; the underclothing be woolen or linen mesh all the year around—thick in the winter, of light weight in the summer; or in winter a combination of silk and wool may be used and in summer light silk, or silk and linen or silk and cotton.

Sleep, nature's soft nurse, is perhaps of all medicaments the best; the patient should sleep, warmly covered, at the temperature of the air without the house. In the country one had best go to bed very early in order to finish sleep (nine hours if possible) before sunrise. If in the city, on the other hand, he must not sleep or live in dark rooms, or such as open on shafts, or in basements.

Tobacco is irritating to mucous membranes; probably no catarrh has ever been cured in an inveterate smoker. Tobacco throats are certainly predisposed to infection. The weed should be used by the consumptive as little as possible. However, in many cases where the habit is of long standing, and essential to comfortable living, it must be condoned in a measure. Smoke must not be inhaled. Cigars and pipes are less harmful than cigarettes. Pipes must be destroyed before they become old; that is a kind of an old friend that will be found treacherous and harmful rather than a good friend.

Cough is nature's effort to get rid of deleterious matter. Nevertheless the patient should cough as little as possible, especially at meals, and as far as may be only to expectorate the products of inflammation; he should invariably, in coughing and sneezing, turn aside his head and hold a handkerchief before his face. Sometimes talking increases the cough. The consumptive must avoid crowds, smoke, irritating vapors, dust and dampness. His house should be built not upon damp, clayey soil, or upon porous, gravelly, elevated dry soil, or a slope —if possible, with a southerly exposure.

LARYNGEAL STENOSIS IN CHILDREN.

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A STENOSIS of the larynx may possibly be caused by conditions outside of the larynx, which act by pressure, but such conditions are rare. In an overwhelming majority of instances the stenosis is due to diseases in the air-passages which result in swelling of the mucous membrane of the larynx. The way in which the majority of these conditions are produced is well understood, and the narrower the passage affected, the greater the result or effect following the stenosis.

In the forms of stenosis which are characteristically sudden in their onset, as spasm of the glottis, false croup, and pertussis, the mode of production is not so well understood. There is no doubt that in all of them the essential factor is a spasm of the muscles which approximate the vocal cords, and in false croup there is the added factor of inflammation which persists after the acute stenosis is over.

It is a peculiar fact that young children are markedly susceptible to special neuroses affecting the larynx, and a characteristic feature of the inflammations of the larynx is the associated occurrence of muscular spasm and consequent stenosis. This is one of the many expressions by the system of the peculiarly delicate reflex irritability of the child.

The type of breathing which is consequent upon laryngeal stenosis is not difficult of recognition. The chief features are the inspiratory sound which is produced, the retraction of the yielding portions of the chest, and the use of the accessory muscles of respiration.

The sound produced by inspiration is due to the forced passage of the air through the much restricted part. The access of air into the lung is much interfered

with, and the inspirations become deeper, and there results the well defined inspiratory retraction of the epigastrium, of the soft tissues above the clavicles and sternum, and of the lateral parts of the chest.

The respirations are not alone more powerful, but they are longer, and while under normal conditions expiration is a purely passive act, in laryngeal stenosis it becomes an active one. If the stenosis is not laryngeal, but the breathing is stenotic and due to causes outside of the trachea or the larynx (as causes in the lungs or bronchi), then the peculiar sound is absent, although all the other features may be present.

In infants who cannot breathe freely through the mouth from any cause, the occurrence of a simple rhinitis will result in many of the symptoms of stenotic breathing; but if forced to cry, the labored breathing is somewhat cleared up for a time.

The acute forms of laryngeal stenosis occur with most frequency during attacks of catarrhal spasm of the larynx and of membranous laryngitis.

Catarrhal Spasm of the Larynx:—This is not common before the first six months of life, most of the cases being observed between the ages of six months and three years. The disease seems to disregard the general condition of the child, for well nourished and vigorous young children are attacked about as readily as poorly nourished and weakened ones. There is doubtless some hereditary influence which is active, some children being particularly prone to attacks upon the most slightly active causes.

The attack is usually of quite sudden onset, although there may be some mild constitutional symptoms for some hours preceding. These symptoms, if present, are generally a slight nasal discharge and more or less hoarseness. As a rule, early in the evening there is the occurrence of a teasing laryngeal cough, which is at times quite hard and is not frequent in the beginning. After a few hours of sleep, or about midnight, the attack comes on, and is evidenced at first by the child arousing suddenly with a hard, hollow barking cough and some difficulty in respiration. If the dyspnœa is very mild, the child may not waken. If the attack is one of moderate degree, the symptoms are somewhat severe for about fifteen to thirty minutes, and after that the signs of the stenosis markedly abate.

In severe cases the attack may persist for one or two hours, and there is marked dyspnœa, particularly upon inspiration, and this is associated with a loud stridor as the air is forced through the much narrowed opening. The distress of the child is great; the pulse is rapid and the temperature normal or slightly elevated. Generally the child sits up and makes quite frantic struggles to regain its breath, or it may in rarer instances lie quiet and prostrated, showing signs of lividity in the fingers and about the lips. The attacks are very apt to recur, and after several hours there is a gradual subsidence of all the symptoms and the child falls asleep. Upon awaking the next morning the little one is apparently well, except occasionally for the persistence of a slight hoarseness and infrequent harsh cough.

On the second night, if the case has been untreated, there is, as a rule, a recurrence of the attack, which is, if anything, more severe than upon the preceding night. Upon the third night the attack is markedly reduced in its severity, and usually at that time does not amount to anything more than the occurrence of a harsh, croupy cough with some restlessness, disturbed sleep, and mild dyspnœa. It is not unusual for a slight hoarseness to persist for several days following an attack, and this is irrespective of its severity.

There is some danger of mistaking the disease for laryngismus stridulus, and some authors speak of both conditions as being similar. This is an error, for laryngismus stridulus is somewhat rare and is observed only in infancy and is the expression of an entirely different condition (malnutrition). In it we observe not only the peculiar form of breathing, but there is an absolute cessation of respiration, and this may be repeated several times daily over a protracted period.

The greatest difficulty is encountered in clearly distinguishing catarrhal spasm from membranous laryngitis. The latter does not usually exhibit a sudden development of stenosis, the child showing symptoms of a catarrhal laryngitis generally for two or three days preceding the severe symptoms. There has usually been some slight change in the voice and the occurrence of a mild and easy, infrequent cough. The symptoms are not relieved upon the following day, but grow gradually worse, so that in nearly every instance we observed slight symptoms for a day or two growing gradually but progressively worse and with an added stenosis. The dyspnœa is not so spasmodic in character, but is more continuous. If it is possible to obtain a well defined history of previous attacks, it favors a diagnosis of catarrhal spasm, and if the inhalation of a small quantity of chloroform fails to have any appreciable effect upon the dyspnœa, then the presence of a membrane is to be suspected.

Membranous Laryngitis:—This inflammation of the larynx is characterized by the formation of a false membrane which depends for its existence upon bacterial infection. It may occur as a primary infection, but such is not usually the case, as it is much more frequently secondary to diphtheria of other parts. The membrane does not exhibit any peculiarities which are at all characteristic of the particular microbe which causes it.

The membrane exists in all degrees of thickness and extent so that in some cases it simply appears as a thin film, and in others is thick and practically occludes the opening in the larynx. Spasm is associated, and in many instances is the chief element of danger.

At first it is impossible to distinguish the membranous from the catarrhal form, for there is the same hoarse cough and voice, which are accompanied with gradually increasing stridor, but these are not apt to be so abrupt in their onset or so severe in their course during the first few hours in the membranous form.

The diagnosis is usually made by the progress of the disease, and if there is a gradual increase in intensity of all or most of the symptoms, the case is more than likely of the membranous form. On the other hand, one occasionally encounters cases in which for a week there are persistent hoarseness, teasing cough, slight constitutional symptoms, and moderate dyspnœa. Then suddenly severe symptoms develop, the breathing becomes markedly stenotic, prostration is rapid and extreme, and the child dies in a few hours.

The usual course, however, is for the child to progressively become worse as time goes on, so that a

child affected first in the morning will generally exhibit worse symptoms at night. Dyspnœa and hoarseness which are slight at first soon become marked and the voice may be entirely lost. Upon the second day the symptoms are such that the chances of a mistake are materially lessened. The face wears an anxious expression and is apt to be quite pale, and the alæ nasæ dilate with the labored respirations. Stridulous breathing is very evident, and the dyspnœa is much increased, causing real distress to the child. The usual paleness of the face is often in marked contrast to the lividity of the extremities, although late in the disease the face may become much cyanosed.

The rise in the temperature generally follows fairly closely the severity of the symptoms, so that when the symptoms are well developed and severe, the temperature may reach 105° F. or higher. When the disease has persisted for some days, the intellect is usually dulled or the child may pass into a comatose state. In children over three years of age the usual duration of the disease is from three to seven days, but in those under three the course is apt to be much more rapid and severe.

The diagnosis must take into consideration several diseases which at first show a marked similarity. First, in regard to catarrhal spasm. A sudden development of a trancient stenosis in contradistinction to a slow but progressively developed one is indicative of catarrhal spasm.

From acute catarrhal laryngitis the disease may be exceedingly difficult to diagnose in the beginning. The use of the laryngoscope, which would furnish conclusive evidence in children approaching adult life is valueless in young children, as they will not allow its use. Early in the disease the temperature is higher in the acute catarrhal form, the dyspnœa is inclined to be paroxysmal, is chiefly inspiratory, and worse during the night.

Dyspnœa in the membranous form is constant, progressively increases, and is expiratory as well as inspiratory. In the catarrhal form the voice is hoarse but not lost. The association of enlarged glands, membranous patches in the throat, and the presence of albumin in the urine (if it has been previously free from it) would all indicate the membranous form.

In any event an examination must be made of the secretions of the throat, and it is well-nigh impossible to get a specimen from within the larynx, the smear must be taken from some of the adjacent structures. In about 80 per cent. of the cases the membrane is due to the Klebs-Loeffler bacillus, and if this is found, the case is one of undoubted membranous laryngitis. The absence of the bacillus proves nothing.

Retro-pharyngeal lymphadenitis may for a time simulate membranous laryngitis, but digital exploration willl soon clear up any doubt that may exist. A foreign body exhibits some signs which are misleading, but the history is usually clear on this point and there is a very sudden onset of the symptoms without any rise of temperature.

Acute Catarrhal Laryngitis:—This disease is not so common as catarrhal spasm, but is apt to be more severe. It occurs with most frequency between the ages of two and five years. Except as it is due to injury, it does not occur as a primary disease, always being socondary to some disease of the respiratory tract or to one of the infections (especially rubeola, variola, and scarlet fever).

The symptoms in the beginning are a characteristically harsh, barking cough, which is worse during the night and is associated with hoarseness. These may continue to be the only symptoms noted, or they may be accompanied with slight constitutional disturbances, as slight elevation of the temperature, general malaise, and anorexia, all of which persist for a few days while the child protests against being confined indoors.

Even in these mild attacks in older children the tendency to relapse from slight causes is marked. On the other hand, the child may be seized rather suddenly with the disease and be aroused during the night with all the classic symptoms of an attack of croup, the evidences of air-hunger being particularly obvious. Generally such an attack quickly subsides after a vomiting spell, and the child falls asleep, showing little evidence of his recent distress and struggles. Or, in other instances the attack may persist upon to the point of extreme exhaustion, the violent efforts to obtain relief resulting in pulmonary congestion from aspiration of blood. When the resulting carbon dioxid narcosis has supervened, then there is usually a relief from the dyspnœa, for the spasmodic element is abolished. There is a tendency to recurrence upon the two following nights.

When the child is very young or in a poor physical condition, death may take place during the attack.

The differential diagnosis from other forms of laryngitis has already been considered.

Œdema of the Glottis:—While this condition is rare in early life, still it is occasionally the cause of laryngeal stenosis in children. It is characterized by a long period of inspiratory dyspnœa and stenosis which may lead to asphyxiation. There is an effusion into the submucous cellular tissue, the infiltration of serum being chiefly in the epiglottis aryepiglottic folds, so that the swelling which takes place causes the appearance of rounded swellings projecting on both sides of the superior isthmus. These are readily detected by digital examination. The voice usually remains clear as the vocal cords are not involved. There is generally a constant desire and effort to clear the throat so that the associated cough is ineffectual and wearing. The development of stenosis is both rapid and severe.

If the cause of the œdema is an inflammatory one, then there are pain and tenderness. In addition to the symptoms mentioned, there are those of the original disease to which this is secondary.

The exciting cause of this condition may be the presence of a foreign body, the swallowing of acids, strong alkalies, or hot liquids, the inhalation of steam or irritating vapors, or it may be due to anything which causes a local irritation. In other instances it follows the occurrence of the acute infectious diseases. It is most frequently observed as a very serious complication of serious disease of the kidneys, the heart, the lungs, or the liver.

A rare disease in itself, it is rarely evidenced as an angioneurosis. The diagnosis is made by direct inspection, or, better still, by digital exploration.

Submucous Laryngitis:—Is almost identical with œdema of the glottis, but differs in being an inflammatory form of œdema which is dependent upon some adjacent inflammation. The examination shows that

all the structures around the upper opening of the larynx are intensely reddened and inflamed and the epiglottis is observed to be swollen and thickened (seen by depressing the tongue thoroughly).

Foreign Body:—In the diagnosis of a foreign body as a cause of acute laryngeal stenosis the history is of great value. Such bodies are most apt to be drawn into the child's larynx during coughing, laughing or crying. It is also common for children to go to sleep with small articles in their mouths. Hasty or imperfect mastication is another element. If the child has a paralysis of the laryngeal muscles, then such an accident is very much favored. The possibility of lumbricoid worms finding their way into the throat must not be forgotten.

The symptoms in the beginning are modified by the size, shape, and location of the body. Cough (the effort to expel the foreign substance) is generally severe and prolonged, so that the child is soon exhausted. This is associated with more or less dyspnœa. Both of these may suddenly subside (as the body slips into a less irritating and obstructive position), only to return again within a few hours.

The diagnosis is generally clear from the history, but at times this may be wanting, and then the case is one of considerable difficulty. In any case of doubt digital exploration is the quickest method of determination, and it may be necessary to practice this with the child in the inverted position. The X-ray will suffice to locate the foreign body if it possesses enough density.

Retro-Pharyngeal Lymphadenitis is by no means uncommon, but is often overlooked as a cause of laryngeal stenosis, and this is particularly true of infancy. It is due to an inflammation of the deep lymphatic glands which receive the lymphatics of the tonsils, soft palate, and pharynx. The onset is singularly insidious and although the child seems very ill, there is aparently nothing to account for it. Finally, as the pharyngeal swelling appears deglutition is very painful and the symptoms of stenosis appear. These come on about seven to fourteen days after the first signs of the indefinite illness. the only means of positive diagnosis is by digital exploration of the pharynx.

Laryngismus Stridulus:—This is not a common condition and is peculiar to infancy. It is a neurosis purely and must not be confused (as it is by some authors) with catarrhal spasm of the larynx or acute laryngitis. The neurosis manifests itself in an irregular spasmodic action of some of the respiratory muscles, and is most often observed as a spasmodic contraction of the abductors of the glottis, interfering with the free access of air.

Its occurrence closely corresponds with that period of life in which the nutrition is apt to be faulty (up to the eighteenth month), and its association with rachitis is marked. In a large proportion of the cases there is craniotabes also, and the association with rachitis is so pronounced that some authors state that it is invariably of rachitic origin. Ocurring as an indication of rachitis, it precedes the time when there is any marked bony change, so that its recognition is valuable for the institution of preventive measures. The marked instability of the nervous equilibrium of rachitic and malnourished children is undoubtedly the predisposing factor in its occurrence.

The attacks may occur at any time of the day during waking or during sleeping hours. The attacks are mild in the beginning, and this quality causes them be overlooked for a long time, but they become progressively more severe as time goes on.

The attack is always sudden. There is a spasmodic inspiratory stridor, accompanied with a crowing sound as the air is rushed through the much narrowed glottis. The head is thrown backward and the face becomes at first pale and then possibly livid as respiration is arrested. In other instances the reverse is the order, the crowing sound not being evident until the spasm shows a period of relaxation. Then, there are several atypical attacks. It may occur simply as a spell of "breath-holding" during anger or fright. There may be a series of audible sobs ending in a whoop which somewhat simulates pertussus. It may occur simply as though the infant was catching its breath. It may be only evident for a time when the infant awakens, and then is observed as a short inspiratory sob or crowing.

If the attacks are at all severe the infant is left slightly weakened and perhaps drowsy. When the attacks are severe the respiratory muscles are held rigidly in a state of extreme inspiration and consciousness may be lost. Carpopedal spasms and general convulsions may follow. The inclination to relapses is very strong as long as the causative condition (malnutrition) is present. The attacks may occur several times each day or may be separated by more or less protracted periods.

In the differential diagnosis the main points to be considered are the repetition of attacks, the general evidences of a rachitis or chronic state of malnutrition, and the age of the infant. If tetany is present, then the diagnosis is simplified.

CHRONIC STENOSIS.

When the larynx is affected by a disease which causes a chronic stenosis the voice loses its normal tone and becomes much harsher than usual. In other cases the voice is entirely lost for a time. The most frequent cause of such a condition is chronic laryngitis, and less frequently syphilis and new growths.

Chronic Laryngitis:—This disease is usually consequent upon repeated acute attacks, and is often associated with tonsillar enlargement and its usual companion, adenoid vegetations. There is a peculiar hoarseness or huskiness to the voice which is chronic but subject to the occurrence of acute exacerbations from very slight causes (as fatigue, exposure to cold or dampness, inhalations of anything irritating, etc.). Sometimes, but not always, there is an ineffectual cough present and a constant desire to clear the throat. The symptoms are always improved under the influence of dry and warm weather.

Syphilitic Laryngitis:—If hoarseness occurs in early life and is persistent, it is always suggestive of syphilis, and while the invasion of the larynx is not so common as affection of other parts, still one must be on his guard to diagnose the case early. When there is a perfectly clear history, or when there are unmistakable signs of the disease, the diagnosis is easy enough. But a great difficulty at once arises if the invasion of the larynx is the only apparent manifestation of syphilis, as it occasionally is. The favorite site is the epiglottis, and the favorite lesion is condyloma. It appears as a thickened, deformed hollow cylinder of a whitish red color, and may sometimes be recognized without the

use of the mirror, but in most instances the examination must be thorough to discover the lesion.

When there is a suspicion aroused, the anus and the corners of the mouth should be examined for evidences of an old syphilitic scar. The remains of old condylomata may be discovered in any situation. Usually the invasion of the larynx does not take place until between the ages of three and ten, because of the tendency to occur only in relapses of the disease.

Tubercular Laryngitis:—This probably never occurs as a primary disease in children, but is always secondary to disease in the lungs. The disease really belongs to the period of late childhood, and even at that period is rare, so that the disease may be considered almost as a curiosity.

The few cases that have occurred have been evidenced by constant and more or less severe pain, harsh voice, and cough of a teasing character. The symptoms of the disease in other parts are well defined before the occurrence of the laryngitis.

Tumors of the Larynx:—In childhood these are almost always papillomata, and the growths may be single, multiple, sessile or pediculated. The first symptoms are generally a chronic hoarseness and a paroxysmal cough, which is soon associated with loss of the voice. The cases in the beginning are very similar to chronic laryngitis, and a positive diagnosis involves the use of the laryngoscope, and the detection of the growths which may be attached to any part of the larynx.

CONGENITAL STENOSIS.

Congenital Laryngeal Stridor:—This is a rare condition but one which must not be confounded with laryngismus stridulus, which occurs in later infancy. The act of respiration is accomplished with a purring sound which may terminate in a distinct crowing sound. This is constant and is increased by excitement. It disappears during the first hours of sleep when unconsciousness is profound. The voice (as evidenced by the cry) remains clear and there are no associated symptoms of any kind. A disappearance occurs later in infancy.

42 Gates Avenue, Brooklyn.

MALFORMATION OF THE ANUS AND RECTUM.

BY MARTIN L. BODKIN, M.D.,
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HISTOLOGY and embryology teach us that the rectum proper is developed from the hypoblast and mesoblast, in common with the rest of the colon; the submucous layer and muscles are from the inner layer of the mesoblast. The rectal mucous membrane is a development of the hypoblast, and it ends with the free borders of the semilunar valves or the serrated margin of the pecten. The anus with all its surrounding tissue including muscles, fasciæ, and cells, is developed from the epiblast and outer layer of the mesoblast, and includes all that portion of the lower bowel that is situated beneath the upper margin of the pecten.

We learn from embryology that the rectum and anus are the development of two distinct layers of the blastoderm; also, that the blood supply is different and independent, coming from different sources, and returning by different routes to the general circulation. Should there be an arrest in the development of one there is not necessarily an arrest in the development of the other. In other words, a malformation in the anus does not mean that there would be a malformation of the rectum. Malformations of either one of these organs, however, are likely to be associated with malformation of the same histogenic origin. Children with malformations of the rectum are very likely to have a cleft palate or other deformities of the intestinal canal. Malformations of the anus are likely to be associated with deformities of the urogenital organs, the bladder or the vagina. There may be with malformations of the rectum and anus deformities of any of the pelvic organs, or of the bony structure.

The enumeration of these malformations as given to us in 1781 by Pappendorf, seems to have stood the test of time for convenience of classification, and but for the theory of embryological formation, would suffice for all purposes to this day. Therefore, a rearrangement to conform with this theory, as given by Tuttle, dividing them into those of epiblastic, mesoblastic and hypoblastic origin, will be followed.

Anus:—(a) Partial occlusion. (b) Abnormal narrowing. (c) Anal opening at some abnormal point, such as the perineum, scrotum, or sacrum. (d) Absolute occlusion. (e) Entire absence of anus.

Rectum:—1. Rectum opening into some other viscus. 2. Normal rectum and anus, but some other viscus opening into the rectum. 3. Rectum arrested in its descent. 4. Rectum absent (including entire colon sometimes).

Symptoms:—As will be seen on perusal of this list of malformations, intestinal obstruction occurs in absolute occlusion of the anus, entire absence of anus, the rectum arrested in its descent, and in the entire absence of the rectum. In other varieties of malformations more or less fecal matter is allowed to escape from the bowel, and the condition for immediate relief is not so imperative.

When a complete obstruction of the bowel occurs as a result of any of these deformities we have before us all of the classical symptoms of intestinal obstruction so commonly seen from other causes in the adult. The child soon begins to vomit, which quickly changes to a fecal character; there is colicky pain, distension of the abdomen from the retention of gas, and depression. These symptoms speedily go on to exhaustion and death.

Treatment:—In those cases of *partial occlusion* by a membranous band immediate removal of the obstruction with a knife or sciccors is indicated; subsequent dilatation may be necessary with the finger. An *abnormal narrowing* of the anus should be dilated every day until the aperture is large enough to admit the small finger of the operator. A *complete occlusion* by a membranous band is best treated by a crucial incision with subsequent dilatation with the finger as suggested for the abnormal narrowing. Care should be exercised that the cicatrix resulting from cutting the membranous band does not contract.

Cases in which Anal Opening is at some Abnormal Point:—If the abnormal opening is situated near the normal site of the anus, the rectum should be dissected out, carried down, and sewed in its proper position. When the anal opening is too far removed to carry out this plan of treatment, the abnormal opening should be closed and the rectal pouch dissected out, and brought down to the normal site. The abnormal opening will gradually close itself, if the surface is stim-

ulated with nitrate of silver. If failure to close within a reasonable time does occur, the opening may be dissected out and an attempt made at primary union.

These cases do not as a rule require immediate treatment if one will watch for symptoms of intestinal obstruction or infection.

The Rectum Opening Into Some Other Viscus:—When the rectum opens into the bladder immediate operation is necessary to save life, as the infection occurs very early. An abdominal section is required to search for a communication between rectum and bladder. The channel of communication may be invaginated into each organ after section and suture; the provision must first be made for the normal escape of fecal matter at the proper site, by means of protoplasty. When this is not feasible by reason of being unable to draw the rectum far enough down, a colotomy should be done at the site of the section or to either side as the judgment of the operator determines. When the rectum opens into the urethra, the condition is more favorable for operation as the rectal pouch is always lower and nearer to the pelvic floor.

The abnormal channel in these cases may be utilized to bring down and stitch at the site of the normal anus. If the abnormal channel is enlarged and divided at the lower end of the rim and a portion of it sewed into the proposed anal opening, the opening in the urethra will close without further treatment. The abnormal opening into the vagina (atresia ani vaginalis) is best left until the child is from three to five years of age, as the exit of meconium and later of fecal matter is not obstructed. When the rectum communicates with the uterus, a condition which is very rare, no definite plan of operating has been laid out. The life of the child should be the first consideration, which would dictate either a colostomy or if possible the establishment of the anus at the normal site.

Normal Anus with Some Other Viscus Opening Into the Rectum:—These may be the ureters, or the vagina, when the uterus or vagina open into the rectum; the same course of treatment described above would apply to these cases. When the ureters empty into the rectum, the bladder is absent, and the matter is beyond surgical aid, eventually leading to infection and death from kidney abscess.

Entire Absence of the Rectum:—This malformation is infrequent as compared to the other malformations of similar origin. The diagnosis between the *anus and rectum arrested in its descent*, and *entire absence of the rectum*, is made with difficulty, and may be impossible without a posterior proctotomy, Kraske's or Vincent's incision for finding the rectum. Should the skin over the proper site of the anus be tinged with the dark greenish color of the meconium it is reasonable to presume that the rectum is just beneath the skin. There should also be a bulging of the surface and palpation will reveal the fluid contents. The introduction of the trocar for the purpose of discovering the rectal contents is not to be recommended, as the pouch of Douglas sometimes will descend beneath the lower end of an undescended rectum, the trocar would then be passed through the peritoneum, and into the rectum causing subsequently peritonitis from infection. The operation for the diagnosis of either of these conditions, which can be made out with any degree of certainty, is as follows:

A straight incision is made at the normal position of the anterior margin of the anus, which should extend upward and backward to the tip of the coccyx. If there be a rudimentary anus, the incision should begin at the posterior margin. Should this fail to reveal the rectum the dissection should be carried upward and backward into the hollow of the sacrum so as to avoid wounding the pelvic organs. The rectum should be loosened from its attachments and brought out through the wound before being opened. If the rectum is greatly distended or if there is a shortened meso-rectum, and the pouch cannot be pulled down, the introduction of a trocar to draw off its contents will generally allow the rectum to be drawn down low enough to attach it to the skin wound. Infection should be avoided by packing the wound with sterile gauze on all sides. It is only necessary to attach the mucous membrane to the margin. The serous and muscular coats may be allowed to retract. If it is impossible to draw the rectal pouch down low enough to attach its mucous membrane to the normal anal margin, it may be attached to the nearest point which it will reach without too much tension, making either a perineal, sacral or abdominal anus. After sewing the mucous membrane in position to protect it against infection, the posterior part of the perineal wound should be closed with sutures taking the precaution to leave in a small drain for a few days.

290 Clinton Avenue, Brooklyn.

Ether as an Anesthetic.—A "London M.D." writes to the *Athenæum*, praising its excellent review of Gorton's History of Medicine in which the name of Morton, of Boston, is given as the originator of ether as an anesthetic. Few people, states this Englishman (referring to his coutrymen) "are aware that we are indebted to the United States for its introduction to our own country by Dr. Morton. I can vouch for this fact, as I was the first person in England to inhale its vapor." The use of this anesthetic had been strongly opposed, especially by Liston. In 1846 the writer, then a young student, heard a lecture by Sir George Johnson at the Medico-Chirurgical Society, after which Morton or his agent, who was present with his apparatus, found that the hospital patient who had been prepared, was not present; "hence my offer to inhale was accepted."

Good for One Cremation. — The Dietetic and Hygienic Gazette notes that physicians have found in their mail certificates for one first class cremation of the recipient, if presented within a given time. All human life, from the cradle to the grave, is in reality a continuous process of cremation, and we like it very well indeed so long as we can supply the furnace with such moderate amounts of palate tickling fuel that we are not consumed—such is slow oxidation. Cremation is but the process compressed within a few minutes. The burial of the dead has been bound up partly with our ideas of bodily resurrection. A very pious brother finding himself in his final illness, begged to be buried not more than two feet below the surface; because, being somewhat deaf, he feared he would not be aroused by the last trumpet along with those of better hearing. His friends searched the Scriptures for evidence; and a compromise was affected by which the body of the deceased was placed at less than the usual depth, though deeper than he had at first thought safe.

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HEALTHY DISEASE CARRIERS.

THE recent appearance of several cases of cholera has prompted the ruling by the national government that every immigrant from a cholera-infected country shall have his stools examined for the vibrio which is the essential cause of the disease. This ruling, which at first thought seems extraordinary, finds its justification and its necessity in the discovery of a number of "cholera carriers" who were themselves apparently in perfect health. It is upon such lines as this that we may get satisfactory explanations of frequent otherwise incomprehensible outbreaks of infectious disease.

The altogether similar status of the "typhoid carrier" is now well understood. "Typhoid Mary," for example, was a cook, seeming, by both subjective and objective signs, to be in good health. She certainly never at any time showed any of the typical symptoms of typhoid. Yet her system was copiously infested with the typhoid bacillus which probably had their primary depot in the gall-bladder; and year after year, during those perigrinations from household to household, which are characteristic of cooks, she infected perhaps a score or more people in a number of families. She was ever a potential source of this noxious infection. Her case was at first thought to be unique; but many akin to hers have since been discovered. In Germany, especially, have a really startling number of "typhoid carriers" been found, many of whom had never come down with the disease. Possibly they were immunized by reason of the very fact that they were typhoid carriers.

There is now abundant cause to believe that there are perfectly healthy carriers of other infections than typhoid—for example, of cholera. Such carriers have oftentimes no record of ever having had the disease in question in their respective cases; yet they have been as potential sources of infection as the most obvious patient, suffering acutely, even unto death, of the disease. Such healthy disseminators have probably always existed, and have frequently been responsible for the spreading of pestilences despite the zeal and the scrutiny of quarantine officials. No doubt the latter have oftentimes been blamed for negligence in letting the sick from infection slip by them; when they had only failed to detect bacteria in people perfectly well and whom there was at the time no reason whatever to suspect as being disease carriers.

The new status now presents to health officers two serious difficulties. The first is to detect the disease carriers. It is comparatively a simple matter to detain at quarantine sick persons until the nature of their disease is fully established; it is comparatively easy even, to detain all, sick or well, until the expiration of the incubation period of the given disease. But such a course were unavailing with healthy disease carriers; these can be detected only by a bacteriological examination of every one on board, well or ill, such as the government has now ordered.

The second difficulty lies in dealing with such persons after they have been detected as disease carriers; how long are these people to be detained? Typhoid Mary was detained many months, at the end of which period she was as profuse in typhoid bacilli as at the beginning; in another case a man was found to have typhoid bacilli in his stools fourteen years after he had been subjected to the infection. Plainly it were impossible to incarcerate all such people indefinitely, as we do patients for brief periods, during the incubations of infectious disease. Yet, as has been well observed, a difficulty is something to be overcome; and in time the difficulties here presented will be overcome. Our clinicians and our laboratory workers will learn to detect infallibly and readily the presence of pathogenic bacteria in the human system, apart from the ordinary symptoms of the given disease; and we shall discover how to eliminate these bacteria from the healthy carrier as well as from the patient. Until these things have been accomplished, however, occasional quarantine failures must not be held blameworthy.

Though the cloud of the healthy disease carrier still remains, the atmosphere has in all other respects been wonderfully clarified. How much so will be appreciated when we revert to the erstwhile popular attitude regarding cholera. New York City, for example, was two generations ago so deserted because of such an invasion that its streets and houses were desolate, and grass grew in Broadway. A score of years ago, during a like pathophobia, physicians made

handsome additions to their incomes by assuring those who came to consult them they were sufferers, not from the disease itself, but from psychic cholera. To-day there is no such terror, though there have been several cases in quarantine down the bay, and in the metropolitan hospitals. The disease has been promptly detected and held in check; and no one seems in real dread. There is now a comfortable public faith in our health authorities; people believe they are fully alive to their responsibilities, and that they are to be confidently entrusted with the preservation of the communal health. Moreover, our profession has demonstrated, and the lay press has loyally and fully spread the information, that cholera is purely and simply an ingestion infection; that it is contracted solely by the medium of food and drink, or bacillus-laden things taken into the mouth. By reason of such education the people have renounced the old, vague notions of this infection—that it is air-borne; that its virulence lies hidden in fomites, that it is transmissible in other mysterious and not understood ways. A typical instance of the influence of ignorance is that of two cases in Bellevue. These men were at first supposed to have cholera; this they themselves believed, and indeed they showed some symptoms of the disease. But the stools were negative, so that these patients were simply suffering (as have many another before them) from excessive fear of the disease. They became quite seriously ill; and might have died had their fears been encouraged. But they were persuaded and convinced; and thus did not die, but quickly recovered.

CANCER RESEARCH.

THE full text of the latest yearly reports of the Cancer Research Fund in Great Britain is not yet at hand; but a synopsis is before us for review. This disease has ever been and still remains one of the most baffling—as it is certainly one of the most dreadful—in our profession's experience. No other has been, and must still be, regarded as more hopelessly incurable, when once it has become vocalized, no other disease has proved so remunerative to the conscienceless and pitiless quack. We find here a typical illustration of the inexorable law of compensation upon which Emerson dwelt, that whilst we have accomplished a notable reduction in the tuberculosis death rate, that of cancer seems to have undergone a reciprocal increase; it seems measurably true that young people do not now die of tuberculosis — that disease of adolescence and early middle life — but succumb instead in later years to cancer. Another phase of this law of compensation is that whilst tuberculosis gleans its greatest harvest from the physically exhausted and the poverty-stricken — civilization's submerged strata—cancer does its gleaning rather from among the well-to-do in life, from the enlightened and those accustomed to sanitary existence. In London, for example, the greatest cancer mortality is found, not in the East End, in "Darkest London," but in Hempstead, Marybbone and Chelsea, which include that city's wealthiest vicinities. In New York the crowded tenements are comparatively immune; whereas cancer thrives in the more salubrious parts of the metropolis. Indeed, healthful conditions would, strangely enough, seem for cancer a more congenial and fruitful environment than those in which such diseases as tuberculosis, typhoid fever and the exanthemata flourish. Patrician cancer has a predilection for the homes of the prosperous, scorning those of the squalid and the miserable; it is comparatively rare in prisons, workhouses and insane asylums. Prostitutes do not frequently suffer; is this because these victims of the world's basest passions so seldom reach middle life? Cancer loves a shining mark—it has a venomous penchant for those of great promise, of great worldly importance in and to their communities, for those who have, through many years of superb activity, fairly earned an illustrious and happy old age.

It is now reported that Sir William Church finds the relationship of cancer to the individual affected to be individual—which statement would seem to indicate that the disease is not transferable. It were important indeed could this theory become established; though some earlier impressions that have been given in the work of this same research fund would thus be contradicted. So far it has been presumed by many investigators that the transfer of cancer from one creature to another of the same species is at least possible. Perhaps Sir William would not make his statement universal, as inclusive of all cancer manifestations. There will be unusual interest to know on what grounds the theory of the transmissibility of cancer seems now to be repudiated (at least concerning the human subject) even though this is only in so far that the disease, whilst artificially transferable, is not spontaneously so.

We find that Dr. E. F. Bashford, for ten years the general superintendent of the general research fund, strongly deprecates the making of disquieting statements as to increase in the prevalence of cancer. True, statistics would seem to show an increase in the number of cases. For example, in England and Wales forty years ago there were 445 cases to the million population, thirty years ago 547, twenty years ago 711, and ten years ago 801. But we are reminded—and are much gratified so to state—that much of this

apparent increase is surely due to improvement in diagnosis, to registration; and more especially to the increase in longevity which has been achieved during the last half century. Cancer is emphatically a disease of old age, it is tenfold as frequent between 65 and 75 as between 35 and 45 years of age. If there are now more cases of cancer than obtained a generation ago, it is certainly because so many more now attain an age at which they are susceptible to it.

We are reminded that little progress has yet been made in the therapeutics of cancer. The search for an adequate and measurably successful means of cure has indeed been long. In 1792 the first cancer hospital was opened in London. But only within the last score of years has systematic work, such as that of this imperial research fund, been undertaken. Now England, Germany, France and America are co-ordinating their humane efforts; who doubts that ultimately all the secrets of this dreadful plague will be brought to light by these combined forces?

We have indeed learned more about cancer in the last several years than in the preceding six thousand. And here one must make grateful acknowledgement of the help given our profession by men and women with whom instincts of humanity have been happily complemented by large monetary resources. Was ever a union of science and philanthropy of so benignant purpose! In thousands of laboratories biologists are at work; in many another institution the essentially clinical aspects of the disease are being studied; at innumerable bedsides experts are seeking statistical knowledge of the essential nature of cancer. And behind and fortifying all this are funds accruing in ample and adequate measure. In such ways have arisen among others the Harvard Cancer Commission, the Gratwick Pathological Laboratory, the institutions in Dundee, Scotland, in Manchester, England, in the Great Middlesex Hospital and the Cancer Hospital in London; and the great Imperial Cancer Laboratory whose work we have here dwelt upon.

COMPETITION BY IRREGULAR MEDICAL PRACTITIONERS.

IN this discussion, it is the intention to ignore the ethical and humanitarian features of quackery and to limit the consideration to economic factors. In so doing, we shall save time and trouble by looking facts in the face and by calling a spade a spade.

There can be no dispute but that, either absolutely or in proportion to the increased cost of living and of professional equipment, the medical profession is much less prosperous than it was a generation or two ago and that it is dangerously near the point at which medical practice will be seriously handicapped in its efficacy by want of equipment, opportunity for study, and such freedom from financial worry as is requisite to clear solution of professional problems. Or, as an alternative, medicine will come to be a respectable hobby for rich young men who will have no practical, financial incentive and who will, in many cases, be mere dilletantes. Thus, even the most business-like and apparently sordid consideration of the problem, is justified by an ultimate respect for the general welfare of the community.

That there exists an overthrow of the balance between demand for and supply of medical services, has been recognized for years. For a long time, this was largely due to conditions for which the medical profession was more or less responsible. As the result of years of agitation, the maximum of medical colleges and of graduations has been passed and the very element of the profession which, formerly, opposed the interests of the profession as a whole, is now committed to a conservative policy of high standards, consolidation of weak institutions, and reasonable limitation of graduation and licensing requirements. It is safe to say that, if the present per capita requirements of medical service were equal to those of the past, and if there were no competition outside the ranks of the regular profession, conditions would gradually right themselves. Indeed, one could almost prophesy that, within ten or twenty years, communities unattractive to residents of the average social grade of the physician would be seriously handicapped by lack of conveniently available medical service within the financial abilities of their population.

There is no question but that the average per capita need of medical services is very much less than even a decade ago. There is less danger of traumatic factors, fewer births, less typhoid, tuberculosis and disease generally. The increasing density of population has developed a greater proportionate number of persons unable, or, at least, unwilling, to pay for medical services. Even if the medical profession were not violating the spirit of professional ethics in a scramble for this work, for the prestige connected with it, it would still be paid for at a lower proportionate rate. The diminution of need of medical services is especially marked in that part of the population which can pay. With the possible exception of obstetrics, this diminution in demand for physicians is a favorable development of civilization; it is due largely to the influence and efforts of the medical profession itself and no sound-minded physician would wish matters changed back to the former condition.

Well within the memory of middle-aged physicians,

the problem of "free medicine," that is of the right of any citizen to engage in the business of treating patients, was still a live issue; and the word quack suggested either the wholesale application of a formula too inaccurate, self-analysis of symptoms; an Indian standing in the market place, a traveling showman or an ignorant and unscrupulous venereal specialist. Such forms of quackery had very little influence on the regular practitioner, so far as competition was concerned. They preyed on the community, but on an insignificant financial scale and every quarter, half dollar or dollar, thus taken from the profession, was put at compound interest for its benefit in the delayed results of neglect and exacerbation of disease.

The contrast between past and present quackery was impressed upon us recently. There was—and is—an institution that exploits its wares by almanacs, barns alongside of railroads, letters from grateful patients and in newspapers, with portraits, and which sells bottles of medicines, good for what ails you. So far as the wholesale business of this institution is concerned, it remains on practically the same basis to-day. But, in the last few years, there has developed a large retail business amounting to the work of a modern hospital, with trained nurses, an excellent laboratory and a staff of well educated physicians and surgeons. One of these men, in his special field, has done work which admits him to a regular national association of specialists and which commands the respect of everyone.

There are ignorant quacks, but there are equally ignorant ethical physicians and we must admit that quackery is now pretty nearly reduced to a method of getting patients, that the method of competition hurts the quack only in regard to his relations with the regular profession and that the competitive factor is now a genuine one.

We have referred so often to Christian Science that only a brief allusion is necessary. We may say, and with truth, that it can cure no real pathologic process, but it certainly relieves in numerous psychic states, and it has vastly diminished palliative medical attendance in comparatively mild, incurable affections and in comparatively trivial acute conditions.

Optometry competes to a large degree with ophthalmology, and surprisingly often with the endorsement of the general practitioner.

Osteopathy also competes, often in a most satisfactory manner, with the combination of trained massage and medical advice. Repeatedly, we have had the experience of a patient who would not employ a trained nurse or a masseur or masseuse working under the guidance of the physician but who was willing to consult an osteopath. And we must confess that, for the most part, the practical result has been satisfactory; even that, in some cases, we have so earnestly desired the relief of the patient that we have connived at his departure from regular attendance.

We may well ridicule the peculiar system of physiology and pathology of the osteopaths but we must admit that, especially with cripples and with elderly persons with muscular and skeletal weaknesses, thorough mechanic treatment is of the utmost benefit. The regular profession, as a rule, is not competent to administer such treatment or considers it "infra dig."

We are living in an intensely practical age. Whoever delivers the goods will get the business. Whoever emphasizes his business, by out and out advertising, or by the mere claim of a special system, has an advantage over the man who unobtrusively follows the code of ethics, in a modest manner. The medical profession must do two things to regain its popular prestige: It must frankly acknowledge and adopt certain valuable ideas, including that of elaborate equipment, to be found in some phases of irregular practice; and it must cast off the last vestige of reverence for forms and customs in favor of practical utility. By this last statement, we do not mean that the individual practitioner should become a quack, but that the profession as a whole should put and keep before the laity, its superiority over partially trained, one-sided charlatans. Also we mean that both in professional societies and literature, and in the every-day work of the practitioner, more attention must be paid to actual cure, and, cure being impossible, to actual though palliative relief.

There is one further point of vast importance: The world pays little heed to the redundant man who is out of a job. It respects the busy man. Largely through its own indifference, and largely too, through unworthy methods of competition of a part of its members, the medical profession is at present too numerous for the work which it is called to do. It can regain its influence and control of practice, only by yielding to the inexorable law of supply and demand.

HALOS.

FOR a number of years past (a century at least) occultists, spiritualists and other students of the supernatural, those peculiarly gifted beings who can grasp many things beyond the ken of the rest of us mortals, have declared that the living human body is closely surrounded by (or, as it were, encased in) an "atmosphere," an "aura" or a halo. Not having been able to discern these phenomena by ourselves, we have had to take the word of those exalted personages, the occultists and the rest, for their existence.

But now the good news comes from London that these halos can be scientifically demonstrated; and to one Dr. W. J. Kilner is our gratitude due for this discovery.

Each of us has a halo: it varies in size and distinctness according to our respective state of health; it makes pain visible; it enables the expert to distinguish between those of us who are dull and those who are intelligent; it is obvious to certain gifted people, though invisible to the great majority of mankind. Dr. Kilner demonstrates all this by means of an apparatus he has devised, which consists of a number of "spectauranine" glass screens, each about an inch and a half wide. Such a screen is made of two plates of very thin glass, between which, hermetically sealed, is a fluid. The screens vary in color; some are red, others blue, changing also as to depth of hue to suit the eye of the investigator.

We are glad to be able to reproduce the testimony of a reporter from the *London Express*—glad because those reporters are so scientific and so well-trained to base just such conclusions upon accurate observation! This reporter (whose name is most unfairly withheld from fame) visited the office of one Dr. Felkin, a specialist who has taken a deep interest in Kilner's investigations. Here was found the subject of the experiments to be mad—a woman of medium heighth, and apparently in good health. She was first of all told exactly the nature of the experiments. Then the reporter was instructed to look steadily at the daylight through one of the "spectauranine" screens; and having placed the woman about a foot away from a dead, dark background, facing the only window in the room, Dr. Felkin drew a blind half-way down this window. From below he drew up a blind of dark serge until it overlapped the upper blind sufficiently to allow light so dim to filter into the room that only the form of the subject's body could be discerned in the gloom. "Now," directed Dr. Felkin, "turn around; and tell me what you see, or if you see anything at all: for there are perhaps four or five persons out of every hundred who, through some inherent defect in the eyesight, are physically unable to perceive the 'aura.'"

The reporter was among those happy ninety-five or ninety-six who have good spiritual eyesight: For perhaps a quarter of a minute the only object that could be made out in the darkness was the subject's form and its outline; then gradually, as the eyes grew accustomed to the darkness, a sort of mist or halo, the one within the other, and the inner one denser than the outer, became more and more distinctly visible. The outlines of this mist followed exactly the contour of the subject's body; the color of the outer aura seemed to be a blue gray, that of the inner aura was darker; also apparently the inner aura was denser. Presently, upon instruction, the subject raised and extended first one arm, then the other, and finally joined her hands at the back of her neck; always the aura followed, as though it were itself an outline of some sort of shadow of the limbs. Next Felkin made "hypnotic passes" (whatever those may be) in the subject's direction, first from one side, then from the other, whilst finally he stood beside her and (raising his arm vertically bent over his hand) allowed his partly extended fingers to point down directly at the crown of her head; every time these passes were made a fine streak of "indescribable" hue seemed to shoot out from the tip of each finger straight toward the subject.

Now this aura, as has been intimated, varies in shade and density, in breadth and in shape, according to the subject's health; an acute and lasting pain (such as sciatica) is rendered visible by the length to which the aura of a particular shade and density extends along the limb in which the pain is felt. The aura of a hysteric differs entirely in outline from that of an epileptic! Auras or halos of quick and intelligent children are more extensive than those of the dull and phlegmatic; the same applies to adults. (Possibly there are those among us who would prefer not to have their auras viewed.) The finest halos envelop the most intelligent; they are most noticeable about the head and more marked among men than among women; the latter's halo is more variable!

We set forth this nonsense because it is of a kind that many excellent people are constantly being "taken in" by. Assuming the reporter really thought he saw these things—all the findings stated are easily explainable by modern psychology. Surprising it is what things can be seen by him who is made to anticipate that he *will* see them. It might, moreover, be just as well for those inclined to entertain seriously such notions to look up the definitions, for example, of the words "suggestion," "delusion," "illusion" and "hallucination."

Plumbing and Health.—At a recent meeting of the local council for the registration of plumbers at the University of Birmingham, Dr. J. Robertson, the medical officer of health, lectured on plumbing in relation to public health. He cited as one of the most remarkable achievements of the nineteenth century the great advance in the public health. For example, that part of Birmingham which, in 1851, had a population of a quarter of a million, in 1910 had 870,000 residents. The death rate in 1851 was 26 per 1,000; in 1910 it was 12½ per thousand—which meant that if the 1851 rate had continued there would have been 12,000 more deaths in Birmingham in 1910 than had actually occurred.

BIBLIOGRAPHICAL

Pathological Technique. Including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By F. B. Mallory, M.D., Associate Professor of Pathology, Harvard Medical School; and J. H. Wright, M.D., Director of the Pathological Laboratory, Massachusetts General Hospital. Fifth Revised Edition. Octavo of 507 pages, illustrated. Philadelphia and London, W. B. Saunders Company, 1911. Cloth, $3.00.

The fifth revision of this valuable text-book, maintains the character which has always dominated the work. It has taken much new matter and many new methods, to bring the text to date.

It will continue to stand in the front rank as a text-book.

Veterinary Bacteriology. By Robert E. Buchanan, Ph.D., Professor of Bacteriology in the Iowa State College of Agriculture and Mechanic Arts, Division of Veterinary Medicine. Octavo of 516 pages, with 214 illustrations. Philadelphia and London, W. B. Saunders Company, 1911. Cloth, $3.00.

The author has put in usable form that fund of knowledge concerning bacteriology, which the student of veterinary medicine should have. The text has been confined chiefly to the subject of bacteriology.

The book is not intended as a manual laboratory practice, but it is a work of great significance to the veterinarian, even in practice.

One Hundred Surgical Problems. The experience of daily practice dissected and explained. By James G. Mumford, M.D., Visiting Surgeon to the Massachusetts General Hospital; Instructor in Surgery, Harvard Medical School; Fellow of the American Association, etc. Octavo, 354 pages. Price $3.00. Boston, W. M. Leonard, 1911.

This is a book of Clinical histories in which we see not detached groups of symptoms, but actual patients and real persons.

It presents one hundred selected cases, well classified in groups to show the phases of each subject, with statement of symptoms and thorough discussion leading to Diagnosis, Treatment and Results.

Of the value of this kind of book there is no question. As the preface states, "The method in proper hands is luminous and the lessons instantly comprehensible."

Certain groups of cases, as those of the Stomach and Duodenum, Graves Disease, Digestive Disorders are worthy special mention. In the last names series are ten full page X-Ray plates showing ptosis of the large intestine. These are equally valuable to the internist and the surgeon, and superior to any work published up to the present in this field.

Each Case History has been thoughtfully considered and well-written,—in accord with a style which Dr. Mumford has made his own. The book comprises a valuable Post-Graduate Course in Surgery presented in most interesting form.

A Manual of Clinical Diagnosis by Means of Laboratory Methods. For Students, Hospital Physicians and Practitioners. By Charles E. Simon, M.D., Professor of Clinical Pathology and Experimental Medicine in the College of Physicians and Surgeons, Baltimore. Seventh edition, enlarged and thoroughly revised. Octavo, 780 pages, with 168 engravings and 25 plates. Cloth, $5.00 net. Lea & Febiger, Philadelphia and New York, 1911.

The new edition of this standard work contains a strikingly original feature which will distinguish it from other books of its class. Hitherto the plan of all works in this field has been confined to the exposition of laboratory methods of diagnosis, the applications following incidentally and without systematic grouping. The development of exact methods has now reached a point justifying a new departure, which has long been in the author's mind, but which hitherto seemed to offer insuperable difficulties in exposition. He has found a solution of this problem, and now presents, in a wholly new section occupying nearly half of the work, the laboratory diagnosis of each disease, arranged under its name in alphabetical order, so that the reader desiring to compare a case with the diagnostic picture of a disease can at once find it given systematically and connectedly, instead of having to piece it out from scattered sections as heretofore. The ease of thus utilizing precise methods is obvious. The previous edition, consisting entirely of methods, has been thoroughly revised and condensed into the first section of this new edition, so that the physician and student now have at command in a single volume the whole subject ideally completed. The two parts are cross-indexed, so that the reader can use the book in either direction, whether he desires to proceed from methods to their application, or from the diagnostic pictures to the methods of making the various tests. This new edition therefore bridges for the student the hiatus between the laboratory and the bedside, and it serves the physician equally well in stepping in the opposite direction, from his actual cases to the methods of accurate diagnosis.

On Diseases of the Lungs and Pleuræ including Tuberculosis and Mediastinal Growths. By Sir R. Douglass Powell, Bart., K. C. V. O., M.D., Lond., F. R. C. P., etc., and P. Horton-Smith Hartley, M. V. A., M.A., M.D., Comtab., F. R. C. P., etc. Fifth edition, with illustrations; octavo, pp. 712. $6. Philadelphia, P. Blackiston's Son & Co., 1911.

The present edition of this classical work shows revision of every sentence of the former and nearly ten years has been occupied in doing it. The reference literature has been brought up to date. In some cases a summary of conclusions has been appended for the better practical guidance of the reader.

Tuberculin is prescribed by measure only. Many new plates and figures have been introduced.

This work belongs in the front rank of its class.

Hieronymus Fracastor's Syphilis. From the Original Latin. A Translation in prose of Fracastor's immortal poem. Printed on hand-made imported paper. Library binding. Crown octavo. The Philmar Company, Medical Publishers, Fidelity Building, St. Louis, Mo. Price, $2.00.

This is a most intensely interesting little classic, which all scholars will desire to read.

Citrate of Sodium in Vomiting. — Sariot, in *Charlotte Medical Journal*, praises this therapy.

CORRESPONDENCE

WHAT CAUSES CONSUMPTION?

To the Editor of the MEDICAL TIMES:

"Tuberculosis is, first, disordered vito-chemic action, arising from malnutrition, or some effect of it; second, a deposit, or infiltration, of slime, from choked circulation and foul blood, with deposits of sediment, which we call tubercle.

"The fine blood vessels, and interspaces between the cells, jammed with sedimentary plugs, congestion, accompanied with nervous effects, later condensation and granulation, precede death to cells, disintegration, dissolution, and organic change. Tuberculosis, in a first or beginning stage, later, consumption, obvious to everyone."

This remarkable statement, which reads as though copied from one of the pathologic textbooks of the late eighteenth and early nineteenth centuries, can be found in a paper recently published in the MEDICAL TIMES.

It is strange that such astounding assertions could be made in this year of grace, 1911, and that as a consequence the prevailing ideas as to the contagiousness and infectiousness of tuberculosis could be called foolish. It would seem that with all the pathologic studies of tubercle that have been made and described, since Koch's notable demonstration before the Berlin Physiologic Society in 1882, the nature and origin of tubercle should no longer be so grossly misunderstood, and it is difficult to understand how there can be any longer the faintest doubt concerning the positive role played by the tubercle bacillus. The writer had an idea that Professor Middendorp was about the only scientist of note who still stood out in opposition to Koch's discovery, but it seems that truth requires more time to prevail even when it is so evident as is the case in the origin of tubercle.

According to the author of the paper in question, tubercle would be a deposit or infiltration of slime from choked circulation and foul blood, with deposits of sediment. This definition seems very learned, but it is not. In fact, it means nothing at all. In order that a deposit or infiltration of slime from choked circulation and foul blood could occur, the author must first prove that the circulation in persons predisposed to tuberculosis is choked, and that the blood is foul. As a matter of fact, it has been shown conclusively that the blood count not only in "pretuberculous" persons but also in those with incipient tuberculosis is practically normal as to its cell content and its percentage of hemoglobin, etc., which could not be the case if the blood were foul. If there were any choked circulation the clinical evidences of early tuberculosis would be much more manifest than they unfortunately are. Of course it is true that a predisposition to tuberculous disease may be aggravated or increased by a condition of auto-intoxication, which would be the only one in which we can conceive anything that might be called choked circulation, but as a whole we have to repeat that the author's explanation of how tubercle occurs does not mean anything. It is very much simpler and infinitely nearer the truth to describe tubercle as what it really is, "the result of the reaction of living tissues upon the tubercle bacillus" (Delafield and Prudden, Text-Book of Pathology, New York, Wm. Wood & Co., 8th edition, p. 247).

When the tubercle bacillus is taken into the organism, it acts as a foreign body and produces a reaction like any other foreign body, such as, for instance, a particle of dust would do. If it is deposited on the mucosa of the bronchial ramifications, the migratory cells are extremely apt to engulf it and to carry it to the regional lymph glands. If, on the other hand, the bacillus is carried to the lungs by the lymph stream from a primary portal of infection, such as, for instance, the tonsils, where it may have been lodged for a while in the crypts before being carried away, the leucocytes may find it difficult or impossible to remove the bacillus from the tissue of the lung, perhaps because it is present in too large numbers. In this case, the organism attempts to wall in the offending foreign body and thus to render it innocuous. Delafield and Prudden describe how, when tubercle bacilli in moderate numbers lodge and develop in the living body, one of the early local effects is a proliferation of the connective tissue and endothelial cells. These cells are grouped around the tubercle bacilli and are flattened at the periphery of the cell group, so as to form a wall surrounding the larger cells which enclose or surround the bacilli. The tubercle is thus the result of an attempt to remove the bacilli from direct contact with the tissue and especially from the circulation, for in the tubercle and for a little distance beyond it the lumen of the capillaries is obliterated.

True, very soon the resistance of the tubercle bacillus to this imprisonment becomes manifest in its chemical action upon the cells in the center of the tubercle, which thereby are destroyed. Cell-death occurs and the center of the tubercle becomes subjected to coagulation* necrosis or caseation, but the occurrence of non-caseous tubercle formation is not associated with the destruction of tissue or with "consumption," and in the very earliest stages of tubercle formation or of tuberculosis, there is, as a matter of fact, an increase in bulk. The wasting occurs only after caseation in the center of each tubercle, when softening takes place.

This process has been studied so frequently and exactly and has been demonstrated so positively in serial sections by the most competent pathologists and by the aid of the most reliable instruments at our command that its actuality cannot be denied any more with even a show of justice.

Whether from an existing tuberculous focus an extension shall occur, whether the tuberculosis shall become more general, affect the greater part of the involved organ and shall spread through the organism, and whether in the natural course of events, owing to the breaking down of the individual tubercles and the resulting destruction of tissue consumption shall develop, depends upon the degree of resistance or upon the predisposition of the individual, which may vary not only individually but may vary in the same individual from year to year, from month to month, in fact, almost from day to day.

It is comparatively easy to verify this brief outline of the origin of tubercle by consulting in addition to Delafield and Prudden's beautiful textbook, the Ger-

man textbooks on pathology, especially by Cohnheim, Weigert, Ziegler, Baumgarten.

When the author says that tuberculosis first is "disordered vito-chemic action arising from malnutrition or some effect of it; second, a deposit or infiltration of slime from choked circulation or foul blood, with deposits of sediment which we call tubercle," he has rather put the cart before the horse. The malnutrition is more apt to be the result than the cause of a disordered vito-chemic action, and it does not in any way constitute tuberculosis, although it may be responsible for the development of consumption out of tuberculosis, that is, for the tuberculosis assuming a progressive destructive course. Tubercle are frequently found on autopsy in subjects without any evidence of malnutrition, and its absence, in fact, the absence of any predisposition, is accounted for by assuming that the tubercle either healed or were arrested in their development.

To return for a minute to the "choked circulation." This indeed takes place to a certain degree in tuberculosis but it does not precede it. It occurs in so far as in the tubercle themselves and a little beyond them the capillary vessels are occluded, which is one reason why tuberculosis does not as a rule lead to bacillemia.

There appear to prevail some very strange ideas concerning the communicability of tuberculosis. The author calls the ideas as to cause, contagion or infection, fallacious, and does not consider all the experimental and clinical proofs that exist, nor does he appear to take into account the fact that in all aboriginal people to whom tuberculosis was brought together with other blessings of civilization the mortality from this disease was enormous, showing them to be entirely non-resistant to the infection. It is unthinkable that even on first and comparatively slight acquaintance with white people a disordered vito-chemic action and malnutrition should have been so rapidly established in these aboriginal people when they had previously been free from it. It is well known that among natives who have not been exposed to tuberculous infection its introduction gives rise to epidemics as serious and fatal as are epidemics of scarlet fever, diphtheria and smallpox. This can only be explained on the ground of the contagious nature of the disease.

On the other hand, among civilized nations the exposure of an adult to a tuberculous infection does not produce tuberculosis followed by consumption de novo. In the course of centuries the Caucasian and more especially the Anglo-Saxon races have acquired a considerable degree of specific immunity to the pathogenic action of the tubercle bacillus and it is undoubtedly true that centuries ago tuberculosis was a far more virulent disease than it is now; in fact, we have observed within our own memories that this process of immunization is taking place among the negro race in the United States. After the Civil War, when the negro, hitherto taken care of and healthy—in fact, considered immune to consumption — was put upon his own resources, he quickly deteriorated, owing to his shiftless, improvident habits, and consumption made frightful inroads almost invariably occurring as an acute disease. In the course of the last ten or fifteen years it is occasionally, and more and more frequently, possible to observe a case and cases in which the disease assumes a chronic form, owing to the fact that a certain immunity has been established which then prevents the disease from carrying off the patient rapidly. Now, an immunity can only be established to an infectious disease, never to a diathesis.

The manner in which tuberculous infection acts in white people is by reactivating a previously existing tuberculous focus. It has been shown definitely that by far the majority of white people at the age of eighteen have at some time or other been infected by tubercle bacilli, while only a comparatively small number of persons present evidences of, or can be shown in any manner to have, in any of their organs an advancing tuberculous focus. In most cases the primary infection which took place in childhood became latent because of the efficient resistance, because of the absence of a predispotion, and the people did not become clinically tuberculous. If now, they are exposed repeatedly to tuberculous infection, if at the same time a predisposition is created such as is the case in a woman who takes care of her consumptive husband or in a man who nurses his consumptive wife, or such as is produced by an attack of influenza or pneumonia, by persistent colds, by worry, night vigils, excesses of any kind, and by many other factors the new superimposed infection may find the organism hypersensitive and an infection which ordinarily would not suffice to break down the resistance of the individual would be capable of producing a tuberculous lesion which progresses and in course of time becomes destructive; consumption results. If the unfavorable factors of environment, the unfavorable habits of worry, excesses, deprivation, etc., can be eliminated, the disease may be arrested and again become latent.

It is in the enfeebled in the sensitive, in fact, in the predisposed individuals that an exposure to tuberculous infection is dangerous, and even then it must be repeated in order to lead to consumption. The healthy active individuals have comparatively little to fear. Insofar are we willing to support the author when he speaks of fallacious ideas as to contagion, but we must insist that the communicability of tuberculosis is a very real and very important factor in the causation of the disease, because without the tubercle bacillus there can be no tubercle and without tubercle there can be no tuberculosis. Since the tubercle bacillus does not exist free in nature, and cannot propagate outside of the animal body it stands to reason that the source of any tuberculosis in man must be looked for in another tuberculous individual with whom close and repeated communication was had. While an excessive fear of tuberculous infection is foolish and productive of injustice and harm, it is just as foolish to neglect the possibility of direct communication. Extremes in both cases are mistaken and erroneous.

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"OUR FASCINATING PRISONS."

To the Editor of the MEDICAL TIMES:

I note what you write in your editorial in the August issue in regard to Mr. Schranieck's report of the condition of our prisons. In it you write that "our prisoners are looked upon as wanderers from the right road, who may by kindly methods be induced to return to it from devious byways." Would indeed that such were the viewpoint of many! If it were, I am convinced that there would be fewer criminals, courts, judges and policemen—and also, fewer prisons—on the one hand, read the letter published August 15th, 1911, in the *Evening Journal*, Wilmington, Delaware, in which Upton Sinclair writes among other statements, of the great iniquity of enforced silence. To fully realize the horror of it and especially for long term prisoners, one must absorb with mind and heart what it means. It can not possibly serve any other purpose than to further degrade and brutalize men and women and should be forbidden absolutely by law. and yet such is true of more than one penal institution, doubtless, as it is affirmed by Sinclair to be true of the New Castle County Workhouse in Delaware.

As a most hopeful and splendid anthithesis to such treatment, let your readers know what exists at the Montpelier Jail, Vermont. As the writer, Morrison I. Swift of "Humanizing the Prisons" states: The inmates "are trusted and treated like other human beings." . . . "So far as possible whatever suggests punishment or disgrace is banished; and they are made to feel that their imprisonment is designed to improve them as men." All honor to "the Sheriff of Washington County, in which Montpelier is located, Frank H. Tracey, who was moved to apply the law to large purpose, not merely to save money for the State, but to regenerate the prisoners who came under his care."*

Would that everyone could and would read what has been accomplished by Tracey's system in reforming the lives and characters of the prisoners. If it were so, and if after reading, there resulted the earnest resolve to do away with the old system absolutely, what untold service to humanity would be the outcome.

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*The Atlantic Monthly, August, 1911, p. 170.

RETROSPECTIVE

Chronic Pulmonary Tuberculosis. — The lesions are generally found near the apices of the upper lobes, and more markedly on the right side. One finds: (a) miliary tubercle formation in and around the smaller bronchi and air spaces, and in the walls of the blood vessels; (b) coalescence of various foci, the development of connective tissue around the resulting mass (more or less completely incapsulating it) ulceration of bronchial walls and caseation; (c) exudative inflammation around the tuberculous areas, the vesicles being filled with masses of epitheloid cells—this consolidated region being red, or yellowish-white if the epitheloid cells are fatty; (d) cavities, the walls of which, when fresh, are formed of caseous and necrotic masses. Many of the older cavities have thick walls of granulation tissue, which constantly produce pus; they may be crossed by blood vessels still permeable and from which, when they are eroded, hemorrhages will result. These cavities contain purulent material, with tubercle bacilli and other bacteria. This form of the disease commences usually as a simple tuberculosis ;but a secondary mixed infection with pyogenic organisms usually occurs, and we have now consumption or phthisis. Small cavities may be walled in by connective tissue, which converts the surrounding portion of the lung into a solid mass. Tuberculosis lesions of other organs and tissues, especially of the intestines and larynx, are often present; there is frequently amyloid degeneration of the liver, spleen and kidneys.

Symptoms:—Chronic pulmonary tuberculosis may be preceded by the acute form; generally—indeed invariably— the lymphatics, especially those of the root of the lung, have been involved. The disease may thus be advanced before it is discovered, or before the patient presents himself for examination. The invasion may be marked by slight hemoptysis; by chill, fever and sweating, and then the patient thinks he has malaria and is surprised and shocked by the correct diagnosis. There may have been a dry pleurisy; or a bronchitis; or a laryngitis; symptoms of dyspepsia or anemia; loss of weight, inanition, lack of concentration and inability to work. The cough is at first dry and hacking, later accompanied by profuse expectoration. The cough is apt to be most severe and distressing at night; and also, when there is cavitation, in the morning, when accumulations during sleep are coughed out in large amounts. In advanced cases, in which there is fibrosis, there may be little or no cough. If the larynx is involved the cough is husky, the noise harsh, the pain referred to this region, and very distressing. The sputum is at first scanty and mucous; it may for days or weeks be absent; later it becomes profuse and mucopurulent; it is often whitish, stringy with pin head, pearly spots; after cavity formation it is nummular (rounded, flattened, heavy, greenish-grey masses). It may contain tubercle bacilli at any time, but especially later in the disease, when elastic tissue from the erosion of bronchi, alveoli or blood vessels is also present. Dyspnœa on exertion becomes marked as the disease progresses. Thoracic pain may be due to dry pleurisy, or to coughing; it is most frequently referred to the apices.

The temperature of chronic pulmonary tuberculosis will generally have its regular rise in the afternoon and its regular morning fall of a degree or two; or (when mixed infection is marked) it may be hectic, with rapid and erratic changes from very high to subnormal temperature.

Hæmoptysis is by no means always of phthisical origin. The examination of the chest may prove quite negative. The "bleeding" may in reality be saliva tinged by oozing from pale and receding gums; this is so particularly in anæmic or nervous or hysterical women. "Spurious" hæmoptysis may have its origin in decayed teeth; in distended capillaries at the base of the tongue; in nasal hæmorrhage percolating to the throat; in granular pharyngitis; in abraded or ulcerated mucous membranes of the upper air passages and of the bronchi in a tracheal varix. Hæmoptysis may be due to pulmonary congestion from mitral lesions; to infarcts or emboli; to atheroma or vascular degeneration; possibly to aneurysm, or late interstitial nephritis, or purpura or arthritis or to "malignant fevers." There may be lobar pneumonia, emphysema or carcinoma; abscess, gangrene, or bronchiectasis or

fibrinous bronchitis; or streptothrix infections. The blood may be grumous, coming from the stomach or even from the small intestine. There may be vicarious hæmorrhages from the lungs. Hæmoptysis of tuberculous origin may be presaged by traces of blood in the sputum, by tickling of the throat or by sharp pains in the chest, especially at the right apex. In early cases probably only the bronchial mucosa is hyperemic or abraided. The bleeding may be manifest in small masses of sputum with the intimate admixture of traces of dark blood; or there may be bright red, frothy blood—a teaspoonful at a time; or the blood may leak slowly into a bronchus so that a blood cast of a bronchial tree may be emitted. In the later stages occur the familiar phenomena—the bright red blood brought up with every cough or filling the mouth: this comes generally from perforated vessels, or from a ruptured aneurism in a branch of the pulmonary artery. There may be a fatal hemorrhage into a large cavity, without the appearance of any blood whatever in the mouth.

The pulse in this form of the disease is frequent and soft; the blood gives no especially characteristic signs. Other symptoms are the brilliant eyeballs, the "hectic flush," the night sweats, progressive loss of weight and strength, anemia, anorexia, gastralgia, dry and lustreless hair, alopecia, clubbed and cold finger tips, incurvated nails, unduly reddened gum margins. The urine is not characteristic except when renal lesions complicate. Diarrhœa is often a terminal symptom, being due to intestinal tuberculosis; fistula in ano and rectal abscess are generally tuberculous.

The Physical Signs:—On inspection we find the patient emaciated; the scapulæ are "winged;" retraction above and below the clavicks; diminished expansion. On palpation we find vocal fremitus increased area consolidated areas or over cavities; bronchial fremitus may be absent over thickened pleura; fremitus may be absent over effusion. On percussion we get dulness over infiltrated areas or a cavity; if the cavity is near the surface and communicates with a large bronchus we may get the cracked-pot sound. Auscultation of breathing gives us rude or bronchial breathing, with prolonged expiration. The voice and whisper are exaggerated; there is bronchophony, or egophony or pectorilogny over cavities. Rales are crepitant and subcrepitant, becoming moist and gurgling as lesions advance. Accompanying pneumothorax would give succussion and coin sound over large cavities. The pulmonic second sound is apt to be accentuated.

The Complications are tuberculous laryngitis, nephritis, meningitis, peritonitis, dry pleurisy, or pleurisy with effusion, or empyema, pneumo- or pyopneumothorax, gangrene, emphysema, pneumonia. The *course*: Recovery is possible, with cavities remaining as a permanent loss of lung tissue. The disease may progress slowly for years, and death will result from acute exacerbation or from extension of the disease to other organs. The immediate cause of death is asthenia, hemorrhage, general (miliary) tuberculosis, or terminal pneumonia. Even advanced cases may recover. There is a tendency to spontaneous cure; lesions then undergo fibrosis, sclerosis, calcification. Mixed infections do badly. An acute onset, repeated hemorrhages, rapid and extensive consolidation and rapid and marked loss of weight and strength are bad indications. Acute cases last but a few weeks; chronic cases several years. Cerebral involvement is fatal; laryngeal cases are serious. Relapses occur on return to the environment in which the disease was originally contracted. Reinfection is not rare in tuberculosis. The following definitions are those of Trudeau:

1. *Incipient.* Cases in which both the physical and rational signs point to but slight local and constitutional involvement.

2. *Advanced.* Cases in which the localized disease-process is either extensive or in an advanced stage, or where, with a comparatively slight amount of pulmonary involvement, the rational signs point to grave constitutional impairment or to some complication.

3. *Far Advanced.* Cases in which both the rational and physical signs warrant the term.

4. *Apparently Cured.* Cases in which the rational signs of phthisis and the bacilli in the expectoration have been absent for at least three months, or who have no expectoration at all; any abnormal physical signs remaining being interpreted as indicative of a healed lesion.

5. *Arrested.* Cases in which cough, expectoration and bacilli are still present, but in which all constitutional disturbance has disappeared for several months; the physical signs being interpreted as indicative of a retrogressive or arrested process.

The *diagnosis* is made by the sputum, the afternoon fever, the loss of flesh and strength, the cough, the physical signs, etc.; X-rays, animal inoculations and tuberculin may have to be employed.

Aritaeus the Cappadonian, who wrote before the Christian era, left this description of the consumptive, which cannot be improved upon the present day—twenty centuries after: "Voice hoarse, neck slightly bent, tender, not flexible, somewhat extended fingers, slender, but joints thick; of the bones alone the figure remains, for the fleshy parts are wasted; the nails of the fingers crooked; the pulps are shriveled and flat, for, owing to the loss of flesh, they neither retain their tension nor retundity; and owing to the same cause, the nails are bent, namely, because it is the compact flesh at their points which is intended as a support to them; and the tension thereof is like that of the solids. Nose sharp, slender; cheeks prominent and red; eyes hollow, brilliant and glittering; swollen, pale or livid is the countenance; the slender parts of the jaw rest on the teeth, as if smiling, otherwise of a cadaverous aspect. So also, in all other respects, slender without flesh; the muscles of the mammæ; the nipples only to be seen; one may not only count the ribs themselves, but easily trace them to their terminations, for even the articulations of the vertebræ are quite visible; and their connections with the sternum are also manifest; the intercostal spaces are hollow and rhomboidal, agreeably to the configuration of the bone; hypochondriac region lank and retracted; the abdomen and flanks contiguous to the spine; jowls clearly developed, prominent, devoid of flesh; so also with the tibia, ischium and humerus; the spine of the vertebræ, formerly hollow, now protrudes, the muscles on either side being wasted; the whole shoulder blades apparent like the wings of birds. If in these cases disordere of the bowels supervenes, they are in a hopeless state; but if a favorable change takes place, symptoms the opposite of these fatal ones occur."

Malaria (or more properly, *mosquito fever*) signifies a group of diseases characterized by intermittent quotidian, tertian or quartan or remittent fever; there are also several pernicious types of the disease; and there is chronic malarial cachexia, with enlargement of the spleen, and anemia.

Etiology. Malaria occurs chiefly in low lands, along sea coasts and swamps, particularly in the tropics and the warmer portions of the temperate zone; in the latter the attacks are most common in the autumn, less in the spring. The specific cause is the hematozoon or plasmodium malarial, a parasite developing in the body of all species of anopheles and transmitted to man, its intermediate host, by the bites of such of these mosquitoes as are infected. The parasites (the plasmodia) are of several classes, each causing a definite type of the disease. That of tertian fever is seen soon after a chill as a small, rounded, or irregular hyaline body within the red blood cells; this increases in size and shows ameboid movements, whilst fine granules of pigment appear within it, and the blood cells become paler and larger; about 48 hours after the chill the pigment has collected at the centre of the organism and segmentation of the parasite occurs, the body dividing irregularly into from a dozen to twenty nucleated subdivisions, like the original hyaline bodies, which are set free in the blood. This occurs at the time of the chill. The parasite of quartan fever requires 72 hours for its cycle in the human blood; ameboid movement is less marked than in the tertian form; the pigment is coarser; the segments number only six to twelve, and are arranged radically. In both types some full-grown bodies remain unsegmented as the sexual forms of the organism. The parasite of æstino-autumnal fevers is much smaller than the other forms, the pigment less abundant; young signet ring forms are common; the small hyaline bodies are found in the peripheral circulation, the older in the spleen and bone marrow; the cycle occupies 48 hours and the number of segments found is about fifteen. Ovoid or crescentic bodies contained in remnants of red cells (the sexually differentiated forms of the parasite) appear in the peripheral blood after a few days. The sexual forms of each variety of parasite enter the stomach of anopheles when the infected person is bitten. Fertilization occurs there, and after completing a cycle of development in the mosquito, the resulting sporozoids may be inoculated into persons bitten by the insect, and the organisms pass through another cycle in their human hosts.

The *Pathology* of Malaria. In acute cases the red cells and the hemoglobin are diminished, and the parasites are found in the blood; the spleen is enlarged, dark, soft, and shows congestion and the presence of many parasites. The kidneys may show albuminous degeneration. In pernicious cases with cerebral symptoms, the brain is often congested and its capillaries may be filled with the parasites; in cases with intestinal symptoms they may be found in the gastric and intestinal capillaries. The bone marrow contains many organisms. Phagocytosis is marked in the marrow and spleen, and pigmentation in these structures and the liver. In chronic cases there is marked anemia. The spleen is very large, its capsule thickened, a cut section is slate colored; microscopically, there is hyperplasia of all the connective-tissue structures with pigmentation. The liver is enlarged, slate colored, pigmented, the connective tissue sometimes increased. The kidneys may be pigmented and evidence chronic diffuse nephritis. The peritoneum and the gastro-intestinal mucosa are sometimes grayish-red from deposition of pigment.

The *Symptoms* of Intermittent Malarial Fever. The symptoms of the tertian, quartan and quotidian types are the same; except that in tertian the parasite completes its cycle in 48 hours; the paroxysms coming every third day; in quartan they occur every fourth day; and an infection with live groups of tertian parasites causes a double tertian, or quotidian fever. The incubation period is unknown for malarial fever. The disease is characterized by paroxysms occurring at regular intervals and consisting usually of three stages—cold, hot and sweating. These are apt to occur in the morning. There may be premonitions. The cold stage begins with yawning, lassitude and headache, and rapid rise of temperature; sometimes nausea and vomiting, followed by shivering and later violent shaking with chattering of the teeth. The chill lasts from ten minutes to two hours. The internal temperature rises from 104° to 106°, whilst the surface is blue. There is severe headache; often nausea and vomiting. The pulse is small and quick. In the hot stage, which lasts from half an hour to five hours, the temperature may increase somewhat; the face is flushed, the skin red and hot; there are great thirst, a throbbing headache and full bounding pulse. The sweating stage lasts two to four hours. In this the entire body is covered with a slight or profuse perspiration, the fever and all other symptoms abate, and sleep usually follows. The spleen can generally be palpated during the attack. In atypical paroxysms the cold stage may be absent or represented only by a chilly feeling; and sweating may be very slight. The patient usually feels well between the attacks. Spontaneous recovery, temporary improvement with recurrence and malarial cachexia are the terminations in untreated cases.

The symptoms of remittent or continuous æstivo-autumnal-malarial fever: This form, caused by the æstivo-autumnal parasite, occurs in temperate regions, especially in the summer and autumn. The symptoms vary. The fever may be regularly intermittent, but at longer intervals than in the tertian; the paroxysms may be anticipated or retarded, making the fever continuous, with exacerbations. The individual attacks are of greater duration than the tertian. The cold stage is often absent; and in the hot the temperature often falls by lysis. The appearance is often like that of typhoid. Spontaneous recovery may occur after a week or ten days; there may be remissions and exacerbations, or the disease may assume the pernicious type.

The *symptoms* of pernicious malarial fever: This affection is always caused by the æstivo-autumnal parasite. The chief forms are the comatose, the algid and the hemorrhagic. The comatose is characterized by delirium or sudden coma, with high temperature. The algid (or asthenic form) begins with vomiting and great prostration; the temperature is normal or subnormal; there may be severe diarrhœa and suppression of urine. The hemorrhagic form includes malarial hemoglobinuria or black water fever, the exact cause of which latter is unknown; by some it is attributed

to the malaria infection, by others to the use of quinine. Malarial cachexia results in symptoms of secondary anemia with enlargement of the spleen.

The *diagnosis* of malaria is made by the periodicity of the symptoms, the enlarged spleen, microscopic examination of fresh or stained blood specimens, and by the test of treatment with quinine. We differentiate from typhoid by the absence of the Widal reaction; from septic processes by absence of leucocytosis; from yellow fever by absence of early jaundice, albuminuria, facies of yellow fever and black vomit. Blood examination is the final test.

The *prognosis* as to tertian and quartan is good as to life; the affection ceases spontaneously, recurs or becomes chronic. Aestivo-autumnal is more protracted, it may become chronic or pernicious. Pernicious, when untreated, often results fatally in a few days. Malarial cachexia is usually recovered from under treatment.

The *treatment* of malaria. Prophylaxis consists in the destruction of anopheles, protection from mosquitoes by screens and the like; persistent treatment of infected persons; small prophylactic doses of quinine (gr. iii tid.) for persons in malarial regions. The disease itself requires quinine, gr. v tid.; this will nearly always cure tertian and quartan cases, especially if the patient is kept in bed until the time for one or two paroxysms has passed. A single dose of twenty grains of quinine two hours before an anticipated paroxysm is oftentimes wonderfully effective. In æstivo-autumnal cases larger doses than gr. v tid. may be necessary. In the pernicious forms hydrochlorate of quinine and urea (gr. xx hypodermically, every 3 or 4 hours until improvement); the sulphate of quinine by mouth may then be substituted. In malarial cachexia arsenic and iron are added to quinine. Blankets and hot drinks for the cold stage; in the hot stage cold sponging, if headache and fever are severe. In pernicious cases whiskey and strychnine, as required. Anemia requires pil. ferri carb. ii pc.; and liq. potass. arsenitis gtt. ii-viii pc.

Typhoid Fever—The Autumnal Disease.—The B. typhosus is taken into the digestive tract; it is an ingestion infection. Its highest mortality is in the Fall; and this fact is probably by reason that the typhoid incubation is coeval with "fly time," when the "typhoid fly" is mostly in evidence. The germ is conveyed through drinking water, or milk directly infected by the bacillus or by water used in washing cans; through food to which the bacilli are carried by flies; occasionally through oysters infected during freshening ("fattened" oysters). Direct infection through the air is probably very rare indeed. Congenital cases have been reported. Filth, improper drainage and ventilation favor the development of the bacteria and predispose the individual. The years between 15 and 25 are most prone; one attack usually protects from another.

Pathology:—The Peyer's patches and solitary lymph nodes undergo hyperplasia, are reddish and grayish, and more or less elevated. The lymphoid cells are increased in number; the endothelium of the trabeculæ and sinuses is proliferatied. Resolution by fatty and granular degeneration may occur; or there may be necrosis and sloughing from obstruction of the blood vessels by endothelium proliferation, and from direct action of the toxins. The newly formed endothelial cells are extremely phagocytic. The ulceration may be superficial, or may extend through the intestinal wall to any depth. Cicatrization may then occur. If the ulcer perforates the intestine there is local or general peritonitis. There may be necrosed blood vessels, with hemorrhage. Sometimes the intestinal lesions seem absent, or they are found only by the microscope. The mesenteric lymph nodes show lesions similar to those in the intestinal nodules. The spleen is enlarged and soft, from congestion and hyperplasia. The liver shows perenchymatous degeneration, and focal cell collections which are sometimes necrotic. There may be suppurative cholecystitis. The kidneys evidence cloudy swelling with granular degeneration of cells of the convoluted tubules. The bacilli are found in the bacilli and feces. Inflammations of the respiratory tract are common; suppurative lesions, generally of the bones, may occur in any part of the body.

Symptoms:—A typical case manifests the following: The incubation is eight to fourteen days, even up to twenty-three days. Prodromata are lassitude, inability to work, chilly feelings, headache, anorexia, diarrhœa or constipation (with or without abdominal pain, which may be localized in the right inguinal fossa), perhaps epistaxis. The invasion is usually dated from the time when the patient must go to bed.

In the first week the temperature often rises each evening progressively until 103-4, with symptoms of a sthenic fever (skin hot, dry, flushed; mouth dry; tongue coated, moist or dry; thirst; at times vomiting; pulse increased in force and frequency and full; respirations increased in depth and frequency; headache, restlessness, sleeplessness; internal as well as surface temperature raised; urine diminished, often high-colored, containing albumin; these symptoms of sthenic fever may pass into those of the asthenic type). The typhoid pulse in the first week is slow in proportion to the temperature—100 to 110, full, of low tension, often dicrotic. The tongue is coated; constipation or slight diarrhœa; the abdomen slightly distended and tender. Some mental confusion at night. Bronchitis often present. From seventh to tenth day enlargement of spleen, and the typhoid eruption.

In the second week the symptoms are intensified. The fever is constantly high and assumes the asthenic type (skin clammy; mouth dry; tongue heavily coated, dry, sometimes fissured; pulse frequent, small, feeble, of low tension; respiration increased in frequency, shallow; apathy, general weakness, headache, delirium or stupor; temperature elevated; urine diminished, high-colored, containing albumin). The pulse is more frequent, headache gradually replaced by apathy; intestinal symptoms increase, stools becoming "pea-soup" if diarrhœa is present. Apathetic facies; tongue coated in centre, red along edges and at tip, becoming dry. There may be hemorrhage or perforation.

In the third week there are morning remissions, with gradual fall of temperature; emaciation and weakness are marked; there may be perforation or hemorrhage. Unfavorable symptoms are delirium, muscular tremor, pulmonary complications and cardiac weakness.

In the fourth week the temperature gradually falls to normal, the symptoms abating and disappearing. Death may occur any time after the second week, from the disease or its complications. Sudden death may

occur with no cause apparent during life or at autopsy. Convalescence is very gradual, appetite intense, with great increase of weight and increase of hemoglobin.

Such is a typical case, but there are atypical symptoms and variations: 1. The invasion may be sudden and marked by a chill; sometimes it is obscured by severe nervous symptoms (like those of meningitis), pulmonary or gastrointestinal symptoms, or those of acute nephritis. In "walking typhoid" the patient may keep up well into the course of the disease. These cases are often severe. Rarely perforation or hemorrhage is the first diagnostic point. 2. The typical fever: There is an evening temperature about 1° higher each day during the first week, up to 103-104°; constant high temperature, up to 105°, with slight morning remissions, in the second week; in the third week it is lower each day, with marked morning remissions: in the fourth week it falls to normal by lysis. The chief variations from this fever are: sudden onset of high temperature after a chill; defervescence after the second week; fever sometimes absent or low; fever rises due to complications; rises due to indiscretions in diet during convalescence, but of no great significance; rises due to one or more relapses and following a course like the regular, but shorter; persistent post-typhoidal fever, often relieved only by liberal diet and getting the patient up. 3. The typhoid pulse is not characteristic; but in the early stages it is more often dicrotic than at a corresponding period of any other acute disease, and generally slower than is usual with the existing temperature. Later the pulse becomes frequent, feeble and small. 4. The eruption is of slightly elevated, flat, rose-colored papules, disappearing on pressure, usually appearing from the seventh to the tenth day, and later in successive crops, each lasting two to three days; generally first in the abdomen, but coming also on the rest of the trunk and on the extremities.

5. As to the digestive system: The tongue is white, coated and moist at first: the gradual disappearance of the coating leaves it red at the tip and edges in the second week. Later the tongue may be dry, brown and fissured, the teeth and lips covered with brownish material (sordes), consisting of mucus, epithelium, bacteria and food. Diarrhœa is an uncertain manifestation; constipation is perhaps more frequent: one or the other of these seems to predominate in epidemics. The typhoid diarrhœa stools are of the consistence and appearance of pea soup; and occur most often at the end of the first and during the second week. Tympanitis is frequent, but is an unfavorable sign only when excessive. Gurgling in the right iliac fossa upon pressure does not indicate typhoid; and attempts to elicit this may injure the ulcerated bowel and induce perforation. Hemorrhage occurs generally about the third week, while the intestinal sloughs are separating; it is marked by a sudden feeling of collapse and rapid fall of temperature, often to subnormal; such a hemorrhage may be repeated, and though serious, is not always fatal. Intestinal perforation is usually marked by sudden, sharp, paroxysmal pain, generally localized in the hypogastrium to the right of the median line, and sometimes with signs of shock, followed by symptoms of peritonitis. Special attention should be paid to local physical signs, as the general symptoms may be slight or masked by those of the typhoid state at the time when surgical aid is most valuable. Leucocytosis at the time of perforation is an important aid to diagnosis.

Among the many complications and sequelæ of typhoid are: As to the skin there is partial alopecia; and there may be bed sores. Parotitis and cholecystitis may supervene. As to the circulation: there may be secondary anemia, myocarditis, thrombosis of veins of the lower extremities (especially the femoral, poplitial and internal saphenous). We may get bronchitis, bronchopneumonia, lobar pneumonia or pleurisy. Nervous manifestations are neuritis (including "tender toes"). The kidneys will give retention of urine, albuminuria, occasionally nephritis. The bones and joints may evidence periostitis, necrosis, arthritis. The B. typhosus, present in various parts of the body, will occasion such inflammations as mastitis and orchitis.

Diagnosis:—There is no symptom especially pathognomic of typhoid. The temperature curve, slow and dicrotic pulse, eruption, enlarged spleen, apathetic facies, coated tongue with red tips and edges, history of a prodromal period, and absence of leucytosis are all most suggestive. Isolation of the B. typhosus from the blood, stools, urine or petechial has been employed. Ehrlich's diazo reaction is valuable as slightly confirmatory of other tests. The Widal (agglutination) test may not be obtained in typical cases, may appear only during convalescence, or remain for years afterward; it is usually obtained about the 7-10th day, seldom earlier. The serum obtained from the blood or blisters, or by moistening the dried blood, is added to a young culture of typhoid bacilli until the serum is diluted to a certain degree; clumping of the bacilli and loss of their motion should follow. A dilution of at least 1-20 (some use 1-50 or more) should be employed; the time limit is to be one hour. The differential diagnosis 1. Of cases beginning with cerebral symptoms, from cerebrospinal meningitis, by the abdominal symptoms or the eruption, and the absence of the diplococcus intracellularis from fluid obtained by lumbar puncture of the spinal canal. 2. Of cases beginning with pneumonia, by later symptoms, physical signs, the Widal. 3. From malaria by the absence of the plasmodium from the blood. 4. From pyemia, by absence of leucocytosis, the Widal, and the negative results of blood cultures. 5. From acute miliary tuberculosis, by less irregular fever, presence of eruption, physical signs and the tubercle bacilli in the sputum of the tuberculous cases. 6. From tuberculous peritonities, by the much more chronic history in the latter. 7. From appendicitis at the onset, by the presence of other symptoms besides pain and fever; the only other period when such confusion is likely is in the second and third weeks, when there may be perforation. 8. From paratyphoid fever, in which the Widal is usually negative.

The Prognosis:—The typhoid death rate varies in different epidemics and in private and hospital practice. In hospitals it is 7 to 8 per cent., when hydrotherapy is employed. Unfavorable symptoms are high fever, delirium, tympanites and hemorrhage. "Walking typhoids" may do very badly; alcoholics do badly.

The Prophylaxis:—Care of drainage, the boiling of

drinking water and of milk during epidemics. Keep flies out of the house, especially away from food and drink. Individual utensils for patients. Disinfection of hands of attendants, vessels, bedclothing, feces, urine and sputum. The disinfection of the sick room: Walls, ceilings and woodwork are cleansed and wiped with 1-1000 bichloride or 5% carbolic solution; or are rubbed with bread when solutions would injure. All dust is removed. Plastered walls and ceilings are whitewashed. After washing with antiseptic solutions woodwork should be scrubbed with soap and thoroughly wiped. Fumigation alone is uncertain, but is useful as an adjunct; this is done by sealing all doors, windows, etc., with strips of paper and filling the room for several hours with formaldehyde gas; fumes of sulphurous acid are said to be less germicidal. If used at least three pounds of sulphur should be burned in a room for each 1000 cubic feet af space, placing it in a pan, supported in another containing water, to guard against fire. After scrubbing or fumigation the room and its contents should be freely aired for several days, admitting sunlight if possible. All worthless articles and badly soiled bedding should be burned. Such pieces of clothing and the like which will not be injured may be soaked in 1-1000 formaldehyde solution (℥j of a 12½% solution in one gallon of water) or in a 20% carbolic solution. Clothing or bedding, etc., may be disinfected in the steam sterilizer. Bed pans, urinals, rectal tubes and such other articles as will permit, should be boiled. Thermometers are kept in 1-1000 bichloride. As to excreta: Feces, vomitus or urine should be mixed with an equal volume of one of these solutions: 1-500 formaldehyde (12% formaldehyde solution ℥ij; water, 1 gallon) for 1 hour; chloride of lime ℥iv, water 1 gallon, for 1 hour; bichloride of mercury and permanganate of potash āā ℥ij, water 1 gallon, for four hours. Sputum is disinfected by burning, boiling or 1-500 bichloride. At to the hands, the body, etc.—Special outer garments may be worn while in the sick room, removed and clothing aired after leaving. Hands of attendants should be washed in 1-1000 bichloride. After death it would be well to treat the body as in infections generally; wrapping it in sheets wet with bichloride (1-500) at once, and burying as soon as possible. Cremation were preferable to burial in such cases. In convalescence when there have been abundant petechiæ, the body should be oiled and frequently bathed while there are any traces of the eruption. Urotropin by mouth is an effective disinfectant of the urine. Preventive inoculations with sterilized cultures of typhoid bacilli promise well.

The Treatment:—Bed, careful nursing, ventilation. Cold ten minutes' baths every 3 hours (omitting two during the night unless nervous symptoms forbid) for temperatures above 103°. First bath 80°, second 75°, third 70°. A cloth about the head over which cold water is poured. The body and limbs are rubbed vigorously while in the tub. Stimulant before or after bath, if necessary, hot milk after bath. No fixed rule for temperature of water or for frequency or duration of baths; we must here individualize, watching results. We expect from baths a tonic action on the nervous system and heart, diminution of stupor or delirium and of insomnia. Contraindications to baths are intestinal hemorrhage, peritonitis, phlebitis, severe nephritis, poor reaction and no improvement after a bath. Cold sponging or cold pack may be substituted when baths are not obtainable; or an ice coil over the abdomen when they are contraindicated. Antipyretics carefully employed are useful: phenacetin gr. v.; antipyrin or acetanilid are given for the indications governing the use of tubs. Intestinal antiseptics are not especially successful. Alcohol and strychnine are generally indicated. Serum therapy is as yet unsatisfactory. For nervous symptoms hydrotherapy, trional, codein, veronal, if necessary. Active delirium will require morphine. All possible weapons should be removed, the patient carefully watched or at least securely fastened to the bed. The mania is frequently suicidal. For "tender toes" paint with tincture of iodine and alcohol (āāpā) once or twice daily; or apply methyl salicylate. For cardiac weakness alcohol strychnine, and the like. For dry mouth and sordes, frequent cleansing and mouth washes: tr. myrrh, ℥j sod. bicarb. ℥ss; water ℥viij; or glycerin with lemon juice; or benzoinated oil. For constipation: small doses of calomel and salines at first; enemata or suppositories after the second week, when intestinal complications are likely to occur. For diarrhœa, enemata, bismuth, tannalbin, opium, etc. For abdominal distention, turpentine in enemata, mv-x by mouth and passage of rectal tube or abdominal stupes. For hemorrhage absolute quiet, application of cold to the abdomen, morphine if necessary, temporary restriction of food, saline enemata or infusion if required. For perforation, laparotomy; if this operation is impossible, morphine to secure absolute quiet; treat the peritonitis. For bronchitis and pneumonia, the usual pulmonary remedies; baths or the wet pack are here not contraindicated. For bed sores, chiefly prophylaxis, protective dressings and lotions. The diet: milk, koumyss or matzoon, broths, beef juice, solid food when the temperature reaches normal. Some withhold a week longer, some give solid food immediately appetite returns.

Convalescence:—Reduce stimulants, increase diet; tonics; sleep; get up gradually. If persistent temperature, with no obvious cause and a good appetite, get the patient up and give solid food. For bacilluria urotropin gr. v tid. or q. four hours for several weeks.

Possible Cause of Failure Following the Use of Bacterial Vaccines and Antisera.—Dr. H. S. Plummer (Med. Record, June 10, 1911), on account of the diversity of results obtained by the use of bacterial vaccines and antisera, inquires into the possible reasons. May not these failures be in part due to faulty dosage, to incorrect intervals elapsing between the doses, to a wrong appreciation of the benefits to be expected from the use of a bacterial vaccine or antiserum, and to a faulty selection of the remedy to be used?

In the proper determination of whether an antiserum or a bacterial vaccine is indicated, we should remember the qualities of each and the theories upon which their use is based. The fact that antisera are elaborated in the horse distinguishes them from bacterial vaccines which are simply suspensions of killed bacteria in physiological salt solution. From this it may be seen that when antisera are used the patient is inoculated

with the protective substances produced by an animal, whereas when bacterial vaccines are injected the patient must produce his own protective bodies.

By way of illustration the author quotes the case of a patient infected by an attenuated strain of streptococcus which ran a chronic course. A culture was obtained and an autogenous vaccine prepared and administered at intervals. The patient continued to grow worse and ultimately died. The patient was already so surfeited with streptococci that the introduction of a few million more dead germs seemed scarcely the rational treatment for such a condition. Had such a patient the power to produce his own antibodies, it would appear rational that he would have produced them with the many streptococci swarming in his system, without the introduction of more. These antiseptococcic serums should have been first used to modify the infection. Therefore in general septicemias the serums are indicated; whereas in localized or semi-localized conditions the bacterial vaccines are to be preferred.

No set rule can be laid down for the dosage of bacterial vaccines. The guiding factor in these cases must be more or less the resistance of the individual to the infecting organism and therefore the ability of the tissues of the patient to produce antibodies. Overdosage has been a not infrequent cause of absolute failure. During the aggravated or very violent stage of the infection one should not administer a vaccine, as the activity of the infecting agent itself may be producing a negative phase. No definite time can be positively made as to the proper interval for reinoculation, but in every case sufficient time should elapse between injections to allow the formation of the high ways of the positive phase. In scarcely any instance should the interval between the administrations be less than three days or in very rare instances more than seven days, the average time being about four to five days.

When treating a patient with bacterial vaccines care must be taken to avoid over-manipulation of the infected area, as this may result in self inoculation which would be equivalent to an overdose of bacterial vaccine. On the other hand, knowing as we do that the opsonins render the bacteria vulnerable to the phagocytes, it is very important to the success of the treatment that the lymph be made to flow through the infected tissues. In cases of infection English authorities advise the use of a wet dressing composed of 4 per cent. sodium chloride and 5 per cent. sodium nitrate. This solution is an ideal lymphagogue and prevents, by inhibiting coagulation, the formation of a scab. Leucocytes are also essential to the success of vaccine therapy, and the best results may be expected when large numbers of healthy leucocytes are present. MacWalter claims that the leucocyte may be increased by the administration of yeast. This method is rather crude, as no definite amount of nucleinic acid is administered. As the success following the use of yeast is undoubtedly due to the nucleinic acid which it contains, it would seem more scientific to use nucleninc acid which, under the name of nuclein solution, is readily obtainable.

It should be borne in mind that though a specific organism may be the original case of the trouble, the advent of other germs producing a mixed infection may delay a cure and in the absence of indications to the contrary, it may be well in such cases to employ such a mixture of vaccines.

Sodium Citrate in Infantile Vomiting.—The New York Medical Journal, June 17, 1911, speaks editorially of an article in L'Union médicale du Canada for June, 1911, which deals with the almost specific effect of sodium citrate in the vomiting of nurslings and of bottle fed babies. Variot has established, after seven years' experimentation, the absolute harmlessness of the salt and its action, previously unsuspected, of regularizing the peristaltic contractions of the intestines, as well as its property of attenuating the curd of cows' milk. A neutral combination results from mixing twenty-three grains of sodium citrate with thirty-five grains of sodium bicarbonate, and from fifteen to thirty grains may be given daily to a nursling. Vomiting is due not only to superalimentation, but to insufficiency of food, which also produces spasmodic contraction of the infantile stomach; in cases of both kinds sodium citrate acts with delightful certainty. To four ounces of water, two-thirds of an ounce of simple syrup may be added, and twenty-five grains of the sodium salt dissolved therein; of this mixture six or seven tablespoonfuls may be given in the twenty-four hours. It will be found to control vomiting, even in those cases where the mother's milk acts as an irritant.

Salvarsan "Don'ts" are provided by J. F. Schamberg and N. Ginsburg (J. A. M. A., Feb. 4, 1911): 1. Don't use salvarsan in mild carditis, advanced tabes and paresis, syphilis of nervous centers, in grave kidney disease, in cachexia or marked debility (unless due to syphilis) in aneurism, optic neuritis or where there are such lesions (as gastric ulcer) where increased blood-pressure may produce hemorrhage. 2. Don't use intravenous injections of salvarsan until fully qualified to do so. 3. In preparing for intravenous injections do not use common salt solution or undistilled water, but have all materials chemically pure and sterile; otherwise the solution may not be clear. 4. Don't ever inject a solution that is not perfectly clear. 5. Don't use a solution any more alkaline than is absolutely necessary to secure a clear solution. 6. Don't inject the salvarsan into the vein without previously running in physiological salt solution; if the needle is not in the vein you will infiltrate the surrounding tissues and cause unnecessary pain and inflammation. 7. Don't infuse the solution into the vein too rapidly; best have a needle of such capacity as will take eight minutes to introduce 200 cc. of fluid; with the gravity apparatus the rapidity of inflow can be readily governed. 8. Don't infuse a cold solution; but use one about blood-heat. 9. Don't use glass pearls in the mixing jar, as small parts may chip off and cause embolism. 10. Don't use a routine dosage of the drug; but guage it according to the weight of the patient and the condition to be treated. 11. Don't employ intravenously any injection in office or dispensary; the patient should be in bed and should be carefully observed for not less than three days. 12. Don't persist in intravenous injection if the patient shows signs of collapse during administration; but stop at once.

MISCELLANY

Scarlet Red in Treatment of Epithelial Repair.—John Staige Davis, in the Bulletin of the Johns Hopkins Hospital, July, 1911, advises the use of scarlet-red. It is a bland and efficacious therapeutic agent. He emphasizes its value and pronounces it quite safe.

Hemorrhoids in Children. — Martin L. Bodkin, in *American Medicine*, May, 1911, says that palliative treatment is wrong. Excision of clot is advised. Constipation must be treated. General anesthesia and use of clamp and cautery is best in rectal prolapse.

Hydrogen Peroxide decreases gastric hyperacidity, states G. W. Hall (Bost. Med. and Surg. Jour., June 15, 1911). Patients by this means get great or total relief from hyperchlorhydria, with gain in weight. Active ulcer is not benefited.

We Told You So.—When Dr. Osler assumed his professorship at Oxford we predicted knighthood for him. He has been created a baronet in honor of the coronation of King George V. Sir William Osler, Bart, is the correct title.

Changes in Circulation in Aortic Insufficiency.—Wm. G. MacCallum, in the Bulletin of the Johns Hopkins Hospital, July, 1911, says that the study of the real cause of the fall of pressure in lesions of the aortic valves has been recently taken up by H. A. Stewart. Regurgitation is a main factor in causing the high pressure of systole, with increased work, and the low dicrotic notch.

Progressive Muscular Atrophy of the Charcot-Marie-Tooth Type.—Frederic J. Farnell, of Providence, R. I., reports a case, with a brief historical study of incidence. This syndrome was first recognized in February, 1886, in France, by Charcot and Marie, and in England by Tooth. It seems to belong to the neuritic forms of muscular atrophies.

In 1899 Painton published in Paris a thesis containing all cases to that date.

The present case is notable for exhibiting three attacks of manic-depressive insanity, manic phase, each of three months' duration. (Boston Medical and Surgical Journal, May 18, 1911.)

Amebic Dysentery.—The general treatment consists in rest, appropriate diet, and opiates when indicated. Irrigations with solutions of various parasiticidal agents have proved unsatisfactory. Ipecac therapy has given good results, so state W. V. Brem and A. H. Zeiler (New Orleans Medical and Surgical Journal, July, 1911). When ipecac per os fails to eradicate the infection, this drug will give success when given per rectum or through the appendix after appendicostomy.

Hay Fever and Asthma.—H. A. Beaudoux (St. Paul Medical Journal, July, 1911) believes that thorough investigation and the right treatment of abnormal conditions of the nose and sinuses would greatly increase the number of cures. When no accessory sinus disease is revealed, Beaudoux irrigates the sinuses, hardens the mucous membrane by means of applications and drugs internally, and destroys the nerve supply to sensitive areas; such procedures ameliorate the condition to a minor degree: further investigation by surgical means is made.

Indican should be tested for in all urinalyses, observes H. R. Harrawer (Am. Med., Jan., 1911), who finds the principal cause of indicanuria to be the putrefaction of proteid food-stuffs in the intestinal canal. The absorption of these decomposition products anywhere in the body will produce indican in direct ratio to the amount of pus present and the conditions permitting its absorption. The basic cause for the complex combination of circumstances with which indicanuria is almost invariably found is due to three factors: rapid and excessive eating of an over-rich proteid diet; a lack of muscular tone in both the intestinal and abdominal walls; disturbances in the normal secretory functions of the intestinal glands, due probably to the toxemia caused by the motor insufficiency. Indicanuria is also commonly associated with disturbed urinary conditions; an excessive urinary acidity; high ammonia index; diminished urea output; a frequent lowering of the total solids with low urea index.

A Travelling Hospital Car is part of the means by which the American Red Cross Society is propagating its first aid work; instruction is thus carried right into the railroad shops and factories by experts who are traveling through the country in a car fitted up with every known appliance for rendering immediate relief to the maimed and injured. The car is a complete hospital and lecture room; the railroad companies find the plan so admirable that they make no charge for transportation.

Aural Delusions in deaf people who think they hear sounds like the whistling of wind, the rustling of leaves, the crackling noises of a telephone, thunder, organ pipes or shouting, may, it seems, be cured. Such sounds, states Marage, a French aurist, are remembered and are caused by persistent excitation of the auditory nerve centers. Marage has invented an apparatus for studying these really inaudible but none the less tormenting noises, which are apt to take in time the form of a persistent delusion; and he is said to have succeeded in relieving many sufferers by applications of electric alternating currents of very high ency or by electric massage.

Lepra Bacilli are being artificially propagated and transmitted to the monkey. The work of Dr. C. W. Duval, in the pathological laboratoires of Tulane University, who is thus producing and checking leprosy, offers reasonable hopes for its ultimate conquest. Dr. Dearborn, of the Metropolitan Hospital, rightly states that the disease is less to be dreaded than tuberculosis, and that "leprosy has been a bugaboo for ages." No doubt it can be cured; but cures may be seeming rather than real, because the disease becomes naturally quiescent during long intervals in individual cases, only to reassert its symptoms after the lapse of years.

Freud Psychanalysis.—Those following this subject will enjoy the comprehensive review in the *American Journal of Psychology*, July, 1911. The fundamental assumption in this method of mental research is that law and order govern all dreams, gestures, automatisms and reveries. These causes we can uncover. Freud has psychanalyzed the life of Leonardo da Vinci, and a review is included of this and of some thousand pages of matter on other people, as well as the related papers of the last six months. In them the word psychoanalyze is used. We do not say psychoasthenia. Why employ a useless "o" in psychanalyze?

CAN THE MIND CAUSE AND CURE DISEASE?

BY W. T. MARRS, M.D., PEORIA, ILL.

ON first thought the reader may consider this an old hackneyed topic. Perhaps it is. After all it is not nearly so old as giving calomel and quinine, delivering babies, setting broken limbs and many other things that we have practiced and written about for goodness knows how long. It has been only in the last decade or so that psychotherapy has had a thorough sifting down from the fog and mysticism and uncertainties that surrounded the subject and has been placed upon the semblance of a scientific basis. So in these discursive remarks the reader will pardon the writer for the reminiscent element in which he indulges and overlook the oft-recurring "I" which is hard to keep in subjection when you essay the role of story-teller. The occasional experiences that dot this disquisition may be in a measure commonplace, but at any rate they may help to adorn a tale or prove feebly illuminating.

About fifteen years ago when living in a small country town I was called one day to see a man in the country who was well loaded down with malaria. That was not a very remarkable disease and my treatment—calomel and quinine—was, I am sure, the quintessence of simplicity. The man remarked that nothing had a natural taste except tobacco. In a spirit of levity and for lack of anything better to say I remarked thusly: "You won't even have any taste for tobacco by the time I get through with you." In the light of subsequent events I spoke better than I knew. The incident was closed on my part and I never thought of it again. A couple of months later, however, a neighbor of this patient called on me to take my treatment for the tobacco habit! At first I was confused and hardly knew what to say, but my caller came to the rescue and said: "You gave So-and-So something when he was sick and he says tobacco has never looked good to him since." A mere flippant suggestion had, it seemed, been seized upon and aroused such a degree of subjective faith as to eventuate in the destruction of the desire for an obnoxious weed.

About the time of which I speak hypnotism, magnetic healing and all their ilk were in the heydey of their glory and I likewise began to investigate these various subjects in their different phases. My researches were both academic and experimental; I endeavored to study, practice and observe. I read the works of Moll, Hudson, Lloyd-Tuckey, Bjornston and others. Hudson's "Law of Psychic Phenomena" was read very extensively along then, more than any other book according to library reports, and it gave a great impetus to the practice of hypnotism. It may have been instrumental in launching the big crop of magnetic healers who flourished for a few years and then dropped into desuetude. These things go in waves and the last few years we have had a recurrence of them in the church clinic and the Emanuel movement, and even it of late seems to be perishing from the "earth earthy." And with reference to the authors who deal in normal and morbid mentality, a great deal is to be learned from them, naturally, but one must cull the wheat from the chaff and not be carried off by the writer's enthusiasm. For instance, Hudson's book is calculated to make one think, but it has a great many flaws and inconsistencies. Every conservative investigator knows that spiritism rests on no demonstrable basis and that so far telepathy is a figment of the imagination. The element of chance and the likelihood of two sympathetic co-workers possessing "two souls with but a single thought" may be made to account for the apparent successes along this line. Thought transference may be worked out some day, but as yet we see through a glass darkly.

It can not be denied that many of our functional ailments, especially the rather extensive list of neuroses and psychoses, may be brought about through suggestion or some adverse subjective influence. The most aggravated case of hysterical manifestations that I have ever witnessed occurred in a girl of seventeen. While she had a rather replete repertoire of stunts which she pulled off more or less regularly, yet her star role seemed to be in a hydrophobia act. She barked, howled, lapped her drink, frothed at the mouth and did all that a rabid canine is supposed to do; this was executed in a tempestous manner and the better the audience the more ginger she put into her work. All this performance was kept up for a number of weeks until we gave her to understand that we were going to shut her up or send her to an asylum when she voluntarily gave up her foolish spells. The only excuse for the girl's vagaries was the fact that she had been bitten on the leg when quite a young child, although there was no history of the dog having hydrophobia. The idea of hydrophobia was accentuated in the girl's mind by reason of the fact that the family had "rented" a couple of so-called madstones and placed upon her. It was thought these stones mitigated the spells to some extent. The madstone is a myth descended from an age pregnant with mysticism and absurdities and obviously could have no virtue in "drawing out" poison which had long previously been disseminated through the system. Furthermore I believe that hydrophobia is a good deal of a hoax. We have tetanus and a few other infectious ailments that may be conveyed by the bites of animals, but hydrophobia as a disease *per se* seems to have never been proven beyond doubt and cavil. Is it some other kind of phobia or fear? An hysteria in which the element of fear is paramount? No germ has been isolated for this affection, although the "institutes" to which patients and the saliva of suspected animals are sent invariably find unmistakable evidence of the disease. The pound men who handle so many dogs in the large cities and are frequently bitten never contract hydrophobia. In England this disease is an unknown quantity. It is conservative to think that nearly all cases of hydrophobia are produced by suggestion.

Many other ailments are in their incipiency due to fear in some of its protean forms. After one has nursed and coddled certain vagaries relative to one's health for some time the symptoms begin to take on a more pronounced and tangible form. This is often aided and abetted by taking patent medicine, by reading quack or highly colored medical literature, and by consulting physicians who lack in tact or whose consciences are not working. To the susceptible, self-centered individual who suffers from some mild infirmity every medical or near-medical suggestion is seized upon with avidity. The cheap illustrations in the newspapers do much to perpetuate the idea of disease. We have all gazed in the daily print upon the woe-begone

individual, suspenders trailing and despair written in his face, with his hands akimbo upon the small of his back and exclaiming, "O my kidneys!" It almost hurts you to look at him. Such a picture conjures up in the minds of many the idea of Bright's disease. The man with the "coffee heart" falling down the stairway stone dead suggests to the nervous person the idea of doing something for his heart before a like calamity befalls him. Again, have you not seen "catarrh" portrayed in a most appealing and pathetic manner? The distressed-looking female is bidding her cheap-skate of a husband a final if not fond farewell. John has "catarrh" and spits right and left until the good woman will stand for it no longer, so she has decided to leave her otherwise happy home. Added to this domestic turbulence is the ever-constant preachment that "catarrh runs into consumption." The catarrh specialist is in evidence everywhere. The subject is made so much of that it is little wonder that the millions of sufferers from a slight rhinitis should feel it incumbent upon themselves to use snuffs, gargles, sprays and cures of one kind and another. Whenever an individual begins doping himself his ailments usually multiply and intensify; he gets the idea of disease more deeply implanted in his mind, while misdirected medication creates new appetites and weakens his will.

Womankind being especially amenable to suggestion with regard to ailments, the diseases peculiar to her sex have in many instances shown a disposition to be somewhat in the nature of an epidemic. Hysteria, chorea, and pseudo-paralysis are often developed by women after having seen others afflicted with these disorders in an aggravating form. In modern times you will notice the almost monotonous dead-level of woman's symptoms. Every lumbago or back pain is attributed to the ever-offending womb, although men and uterusless women suffer these same pains. Every woman is disposed to assign all pains and uneasiness in the inguinal regions to a perverted function or diseased condition of the ovaries. Women discuss their symptoms with one another and subconsciously absorb their mutual symptoms. Too often physicians indiscreetly tell nervous, impressionable women they have this or that affection relative to their organs of generation—it may be a transitory leucorrhea, a slight malposition, or a subinvolution that is correcting itself—but the more they think of these symptoms the more they become intensified mentally, until an operation will seem to be the imperative resort. Other women are being operated on all the time and the idea of an operation will not down. When the idea of a major operation becomes thoroughly entrenched in a woman's mind, especially if her family tree is decidedly neurotic, it amounts with her to almost an obsession and in the words of a popular advertisement she "won't be happy till she gets it." Not that women have any voluntary yearning to figure on the operating table where they may undergo separation or tailorings upon their organs; far be it from me to cast any such aspersions upon the sex. But with many women there is through the subconscious forces a subtle, uncanny wooing for the same hazards that other women somewhat similarly afflicted have undergone. It may be remarked in passing that the latent manifestations of gonorrhea necessitate something like eighty per cent. of the bona fide operable cases in gynecology, yet it is mainly the women with functional disorders who have the morbid call for cutting operations.

The astonishing degree to which a female neurosis may be brought on by mere suggestion was forcibly impressed upon me a year or so ago. I was called a long distance by rail to see a neurotic woman of about fifty who claimed to be suffering the agonies of the lost from her bladder and was "passing great chunks of flesh and blood" from that viscus. I could find no evidence whatever to account for such gross subjective symptoms. In due time I discovered that another woman in the neighborhood was suffering from an acute attack of cystitis and had been subjected to bladder washings by her physician. From this my patient had seized her cue to work up a tremendous case of "bladder trouble" herself.

Physicians in making examinations of introspective, imaginative patients should use caution and tact lest they feed symptoms that are not based on any tangible or pathologic basis. The nervous person with a slight cardiac irregularity is simply made miserable when the doctor asks numerous questions about the heart function and goes into the minutest details of the case with the stethoscope, and particularly shuts up like a clam and looks wise after having done so. I am sure that such conduct on the part of the medical man would make me feel that he had discovered something gravely wrong. A few months ago I was called in consultation with a methodic old physician over a neurotic girl who perhaps had only a little attack of "unrequited love" and his cardiac auscultation lasted a painful length of time, thus materially adding to the patient's discomfiture. Physicians have been so painfully scrutinizing of late years in regard to the right iliac and hypochondriac region that many individuals are now making a self-diagnosis of appendicitis. A while back a young man sent for me after having "toughed it out" for several days with a gastro-intestinal irritation. Upon being asked why he did not call me sooner he replied: "I was afraid to call a doctor in, for I felt morally certain that he would say I had appendicitis and that it would mean me for the hospital and an operation." The average individual nowadays who has a pain below the equator has his thoughts turned toward appendicitis and the hospital.

The psychic influences operate in many ways to be at least a contributing factor of causation in disease. The *fear* of disease is well known to be potent in the production of the very disease we would run from. Years ago when I attended medical college cerebro-spinal meningitis broke out in our school and several lusty young men rapidly succumbed to that terrible disease. We who were so fortunate as to escape it were so well posted on the symptoms that we were constantly imagining that we felt the prodromal symptoms of that death-dealing enemy. Some who had no real signs or symptoms of the disease were so scared that they pulled out for their distant homes. When the lecturer on chest diseases began his series on the heart we went stringing off to his office to have his assurance that our "pumps" were sound and intact. We also subjected our urine to frequent analyses lest nephritis or diabetes, like a will-o'-the-wisp, take us unawares. The reading of medical books seems to have a deleterious effect upon many young men; the omnivorous perusal of highly-colored quack literature cannot

fail to have a baneful effect upon impressionable individuals. Physicians who themselves get sick always make too much of "symptoms." When the writer was indisposed for a few weeks last spring and fearful of the almighty tubercle bacillus getting his relentless grip on him, with a little variation of temperature on both sides of the normal mark, he almost lived with the thermometer in his mouth. Conservatively I think I took my temperature twenty times a day. Precision in diagnosis and the proper line on symptoms are a good thing if we make the best use of them, but over-attention and an ultra-introspection tend toward the undoing of many sensitive souls. A physician remarked to me not long ago that in his opinion a sick doctor should not be allowed a thermometer or a watch to time his pulse by.

Medical advertising with its brazen effrontery and preposterous assertions has been instrumental in planting the disease idea firmly in the minds of thousands of people who are somewhat inclined toward neurasthenia or some slight degree of nerve instability. If this disease idea takes on sufficient color to prompt an individual to begin taking nostrums we know that too often it leads to chronic invalidism, mental handicaps or a descent into dope debauchery or alcoholism. The wily, snaky "manhood restorer" has lured many young men to their doom in exaggerating slight functional deviations into a horrible disease. When an adolescent of highly-imaginative bent acquires the idea of impotency and its train of concomitants set forth in quack literature it is like moving a mountain for him to pry himself loose from such vagaries. All the symptoms of neurasthenia, hypochondria and melancholia multiply in rapid succession. The "personal letter" of the charlatan is calculated to impress the unsophisticated. A few years ago I wrote to one of these advertising "specialists," one who consumes acres of space in the mail-order papers telling how he can cure everything in general and "lost manhood" in particular. My brief note simply inquired whether he could cure me or not, taking care to conceal my identity, of course. Letters flowed in a constant stream to my desk for weeks thereafter. They were by turn coaxing, wheedling, insinuating and audacious; when I did not respond and signify my intention of taking the only successful treatment from the renowned doctor the letters were almost threatening and abusive. The awful state into which I was swiftly moving was a living nightmare and I was admonished to think how I would feel disporting myself in a madhouse, for it would surely come to pass if I long withheld treatment. While all this trashy, ridiculous correspondence was slightly amusing to me, knowing that the man behind it was a quack and conscienceless impostor and furthermore that "lost manhood" is a myth and a fake, yet had all this fusilade been directed at an "easy," half-educated youth I realize that it may have so upset his equilibrium as to almost destroy his purpose and ambition in life.

Speaking further of the false impressions implanted by quacks and irregulars I was forcibly impressed by a case that came under my observation a year or two ago. One fine May day I was called to a suburban farm to see a young man of 26 years of age who was employed there. The case was an interesting one from many points of view. It struck me that the man was a little "queer," but it was only after a second visit to him that I discovered that he was a mental derelict and that his alienation might be classed a paranoia. On most matters he was rational and his reasonings and deductions, his memory and judgment, were apparently normal, although he was naturally of a low standard of mentality. He was troubled at times by delusions of persecution and these dominated his life, although he could at times reason himself as to their falsity. His life had for ten years been a ceaseless round of suffering in his attempt to gratify the promptings of this unseen, uncanny influence. He had been in a private sanitarium a hundred miles distant and there maintained by relatives, but he had eluded them and hiked away to this quiet farm where he had been employed for several months during all of which time he had carefully concealed from others all his delusions and vagaries. The point that is apropos to this story is that the man was imbued with the belief that he was suffering both directly and indirectly from the unpardonable sin of masturbation. It seemed that he had not been an excessive masturbator, but about the time he indiscreetly indulged in it a time or two he became obsessed with the idea that he had committed a heinous and unforgivable sin. He had obtained this absurd and unnatural belief from perusing the diabolical literature of the manhood sharks and was obsessed with the conviction that the individual who thus abuses himself is not infrequently struck dead by outraged Omnipotence. The man's fears and absurdities, his delusions and distorted reasonings, all related to his sexual function—a sexual paranoiac. The immediate cause of his mental dethronement seemed to have been in devouring obnoxious sex literature. At the same time insanity in this case was not a long and arduous journey and if he had not gone the sexuality route it may have been some other equally vain. But nevertheless in persons whose mentality is so low as to put them near the borderline of insanity, or they have the handicap of some latent psychopathic disorder, the shock produced by reading egregious lies put out by medicine vendors may do an incalculable damage. On the other hand the near-insane may in many cases have their mentality conserved and kept from vanishing by a wholesome and helpful environment.

We have in the past been too much disposed to account for disease (not ease) on a purely tangible basis, not taking into account the hundred and one mental influences that may enter into the causation of many maladies from which the human family suffers. Worry and trouble in their protean forms may be put down as top-liners, although this is a matter that needs qualifying. It is true that there are people so constituted that trouble for them has a salutary effect just as "one man's meat is another's poison." What is trouble and a source of mental perturbation for one person may be an inconsequential matter to another. So much depends. Certain kinds of trouble, alleged or real, may be useful to some in that it gives mental occupation and helps to do away with morbid introspection. A few years ago I was the physician of a young woman of nervous temperament, refined and educated, but lacking in ballast for her erratic nerves. She once candidly confessed to me that she frequently picked a quarrel with her husband in the evening in order that she might indulge in a "nerve storm." The reactionary calm from the nerve cyclone was very grate-

ful and enabled her to sleep better. Her tranquility was thus obtained in a roundabout, vicarious manner during all of which the husband seemed to have been the goat.

Nervous and energetic people, by the way, usually bear trials and tribulations comparatively better than the staid and lymphatic. The naturally morose and despondent are more readily borne down by grief and afflictions. It is a very difficult matter to weigh the adverse mental influences that operate to the detriment of an individual. Many who are overwhelmed with gloom, despondency and innate pessimism are very reluctant to let their true feelings be known. Many, however, who have great trials and live under a very cloudy mental atmosphere may not suffer appreciably because of the fact that they ventilate their feelings freely.

In general women stand the stress and storms of life better than men. It is true that a myriad of "little things" enter into her life, many of which man regards as inconsequential and hardly worth while; yet the very variety and complexity of woman's life, her emotions, her hopes and fears, give her a wider range of mental occupation. Man is disposed to live and breathe a broader existence, but when financial or occupational turmoils gather about his head he is inclined to show the white feather. A woman may worry herself sick for the time being because some other woman has made a piquant remark about her bonnet or her baby, but it will never cause her to produce a hole in the river. The man who loses his job or otherwise gets a hard jolt from adversity does not display the grit and fortitude that his companion does under like circumstances. So after all women stand the ordeals and hazards of life better and longer than do men. It is easier for a man to lie down and die of trouble than for a woman to do so. A few years ago I lived next door to a man of 50 years of age who took to his bed and died in a few days. When he took to his bed the man was apparently sound and healthy, but he was overcome by anguish and discouragement. He had met with financial reverses, another man having cheated him out of all of his earthly possessions, except a family of undesirable grown-up boys who were a thorn in the father's side. The heart, kidneys and other vital organs did not show signs of disintegration and no other form of break-down was in evidence. It seemed that the poor man simply gave up the fight and his life centers at once lost their quickening force.

It has been my experience, based on a good many years of observation, that the person who comes in possession of a deeply rooted conviction that he is going to die will make a pretty good stagger at it whether there be any good reason for it or not. Of course hysteria is excluded, but I do not think the average hysterical woman down deep in her heart thinks that she is going to die, although she may feel that death would be a relief to her. All physicians turn as if by instinct from patients who have preconcieved ideas that they are going to die. Too often their morbid prophecies are made good. Is there something about a serious disease that sometimes gives its possessor a psychic hunch that death is imminent? Or does an intensely morbid mind result in a dissolution and undoing of the life centers? Both are perhaps factors, but no one is metaphysician enough to understand it all. Last winter I attended a young colored man who came down with a spinal affection—perhaps a meningeal inflammation—and succumbed in a very few days. He had always been hearty and healthy, but about a week before the onset of his illness and while yet working at his trade as a barber the young man was seized with the overwhelming conviction that he was going to die. He accordingly joined church and was baptized and wound up all his earthly affairs. It is probable that in this case the pathologic character of the disease was such as to reflect a definite psychic aura which in an otherwise healthy person would naturally be interpreted to mean the death-knell.

But while the psychic influences adversely turned spell disease and misery we may turn them to good account in properly applied suggestion and psychotherapy. The mind is after all a stronger agency in the cure of disease than in its production. To utilize these forces for the betterment of the patient is to practice medicine in its broadest sense. The mission of the doctor does not stop at giving pills and opening the windows of the sick chamber. Every word, look and gesture of the physician means something to the sick person whose environment needs to be made more hopeful and helpful. The patient should be looked upon as a soulful and sentient being and not in the manner of a watch whose "insides" need fixing. He should not be regarded simply as a "case" that presents pretty pathological possibilities. The first duty of the physician should be to inculcate in the mind of the patient a feeling of optimism and hopefulness. It is imperative that we do this if we would long retain and benefit the patient. The laity recognize this principle and fain would employ a doctor in whom they have no confidence. That is why one man's calomel and digitalis are better than another's.

Suggestion in one form and another is therefore one of the important agencies for the alleviation of many of mankind's ills. A dose of medicine may have real value within itself; I believe in drugs; most of us do; but often it does little more than to augment and carry home the hopeful and expectant suggestion which the doctor has just given the patient. Faith without works is void and medicine without faith isn't much better. This may not apply to cathartics and quinine and a few others. But a medicine given for a definite purpose and backed up and re-inforced by a strong suggestion of what may be expected from it will, other things being equal, accomplish more than when no expectancy on the part of the patient is aroused. The wonders that are sometimes produced by an active imagination was impressed upon me by this incident: A lady whom I had given a diuretic—elixir B. J. & A. P.—with the remark that it was to improve the condition of the kidneys afterward stated that it surely went to the right spot, for no sooner had she taken a dose until she felt its cooling action in her kidneys! If you are giving a remedy for a disturbance or pain in the bladder it pays to tell the patient what he may expect; his imagination will surely help it along. The same is true of most everything else.

Speaking of the bladder I am reminded of a case which occurred several years ago. A homeopathic physician stated that he had been giving a preparation of sepia for bed-wetting in children and the remedy was in such an attenuated, diluted nothingness form

that the good doctor became skeptical of its bona fide therapeutic efficacy. Like many other physicians of that faith it had taken the doctor a good while to tumble to the inertness of many of the Hahnemanian remedies. So instead of employing the sepia agency the doctor began using a placebo and to his surprise he found that his success was just a trifle better with the placebo than with the alleged specific. The secret of success in the cases of enuresis in question seemed to have depended upon the methodic and regular manner in which the remedy (?) was given and the subjective faith which it aroused. A remedy taken often keeps up the idea of hope and expectancy. Psychotherapy, by the way, is in the absence of a pathological condition our best agency for the alleviation of bed-wetting. It may be given during hypnosis of mild degree or even during the waking state just as the child is slipping off to the land of nod.

In the beginning of this article I referred to a case of tobacco habit which I unwittingly and unknowingly "cured." After that I began to have more faith in the newspaper lady who puts the dope in Bill's coffee to secretly cure him of his chewing habit. If through some hocus pocus the good man should get wise to her intentions I can readily see through what agency we might expect him to be cured. Since the miraculous cure of a case of nasty tobacco chewing as related I began using placebos and suggestion in one form and another in other cases of dope and tobacco habit as well as in cases of alcoholism. The most important matter of all in the separation of an individual from a habit is for him to form a healthy, deep-rooted desire to be cured. This done the rest is easy. A fair modicum of success has attended my efforts. If you are treating a man for the tobacco habit it is well to give him a placebo to take often. He should also be instructed to take a drink of water frequently and also munch peanuts and apples between meals. These things give him something to do and distract his attention to other things. Besides the craving is more intense when the stomach is entirely empty. These simple measures are of value in withstanding the desire for liquor. Quassia and other bitter drugs and capsicum are of some value in lessening the appetite, but even their action is mainly through the agency of the mind. The bitterness and burning in the pharynx temporarily lessens the whiskey appetite and their tonic value amounts to something. One of the best, although now somewhat ancient, methods of favorably impressing a drunkard is to give him one-tenth grain of apomorphine hypodermically and let him fill up at once on whiskey. He will attribute the nausea and emesis to the antagonizing (?) effect of the remedy. A hypodermic of plain water may accomplish all that is desired the next time.

Suggestion and psychotherapy when judiciously employed are the most valuable agencies in our armamentarium for the alleviation not only of psychopathic disorders but nearly all others in the disease category as well. Suggestion in its broadest sense would include everything calculated to contribute to the patient's mental and physical well-being. Naturally this will be applied to the patient during his conscious, waking state. Suggestion given during hypnosis, however, has a value in many cases that transcends our best efforts to reach and benefit the mind during normal consciousness. Medical hypnotism has of late years fallen considerably into disrepute because it has been hawked about by charlatans of high and low degree; the magnetic healers, the Weltmerites and the others have caused it to lose caste. Since the bizarre stage people have given so many ludicrous exhibitions with silly adolescents and imbecile men of middle age making monkeys of themselves, with an occasional spectacular demonstration of burying alive some fellow whom the wizard hypnotist has under his amazing control, the more sensible public has come to have a feeling of disgust and repugnance for the very word "hypnotism," while the less informed are inclined to associate something uncanny and evil with it.

Hypnotism obviously is not true science but merely one of the protean manifestations of the unsolvable riddle, the human mind. It depends for its phenomena upon the duality of the mind, consciousness and subconsciousness. It is during hypnosis that a person is rendered most highly susceptible to suggestion directed toward him from an outward source. A person who is amenable to a certain suggestion or influence while awake will be more responsive to the same during hypnosis. As a rule a person hypnotized repels adverse and disagreeable suggestions. The writer has used a great many individuals as subjects for both treatment and experimental purpose, but he has never observed any untoward results ever having accrued to any of them at the time or subsequently. I can readily conceive, however, that the person who goes through a foolish exhibition repeatedly for the amusement of others might sooner or later show evidence of mental impairment and a weakened will. It should be remembered that hypnotism is a two-edged sword and in unskilled hands may produce harm. Should the operator and subject both be weak or evil-minded they could easily make trouble for one or both. At the same time this may happen to persons without the aid of hypnotism.

It is needless to here state that hypnotism should be employed only for medical purpose; as an educational factor it might occasionally be rung in to reach incorrigible children. Mental and moral handicaps may be helped by suggestion given during hypnosis by one who is thoroughly skilled in its modus operandi. While these things can not give one character and individuality, yet an uplift may be given whose ultimate results are most salutary. For instance, I once gave a cigarette-smoking youth the suggestion during hypnosis that the "pill" would make him sick and from that one casual treatment he was unable to roll a cigarette for several weeks. If some good fairy or other impossible creature could have stepped in and given the youth backbone during the interim a permanent cure could doubtless have been effected.

In the psychoses and emotional disturbances of women which amount to almost insanity I have found suggestion the most valuable agency. It is best to first try to impress the sufferer by making the right appeal to her will and consciousness, by directing her mental employment and by making her environment as nearly correct as possible. When these prove unsatisfactory suggestion under hypnosis is worthy of a trial. A few years ago a young woman of my acquaintance was suddenly bereft of her babe by reason of an acute illness and like a certain woman of old

she would not be comforted. She was temperamentally nervous and emotional, and as sleep would not come to her pillow, her husband feared for the preservation of her mental integrity. At his request I induced sleep by suggestion on two successive evenings, the rights of rest being all that could be hoped for, and after that insomnia and its consequent nerverackings were banished.

To be quite conservative, however, I believe that it is seldom necessary for medical purpose to put a person under deep hypnosis, but there may be a few psychoses and idiosyncracies that can be reached and expurged in no other way. Ordinarily the mind can be impressed by wholesome, helpful suggestion by merely getting the patient in a quiet, passive mood so that our words may be thoroughly driven home. Our treatment along the line of psychotherapy will be as sounding brass unless we can infuse the patient with cheerfulness, optimism and courage. Our mental healing is not worth while or worthy of the name unless it is sufficiently comprehensive in scope to peer into the patient's home life and the things that daily beset her. Environment must be properly adjusted, although this is often easier said than done. Work and rest, play and study, the active and passive elements of live should have judicious regulation. Too often the physician's advice to the patient is perfunctory and relates only to generalities. A lunger in California recently wrote to the physician whose name he chanced to see attached to an article in a medical journal, requesting a little advice on diet, exercise, etc. Specific, well-regulated suggestions were given and the young man wrote back: "That was the very thing I needed to be told, for the average doctor does not get down to brass tacks when he hands out advice to the patient." It is senseless to advise a patient to take a sea voyage when he can scarcely scrape up street car fare.

Reverting to the query with which we started this discussion, we realize that the mind is a strong factor of causation in many of the ailments that beset us and that these same forces which sometimes work to our detriment and undoing may be harnessed up and made to work backward for the rejuvenating and upbuilding of our tissues and functions. After all, "there is nothing in the world but man, and nothing in man but mind."

Laryngeal Tuberculosis.—S. Von Ruck (Med. Rec., June 17, 1911) finds laryngeal lesions to be much more frequent and to appear earlier in sufferers from pulmonary tuberculosis than is generally supposed. The laryngeal affection gives as a rule no subjective symptoms in the early stages, except in certain localizations, and like the early stages of the pulmonary disease the laryngeal lesion may become regressive, or remain stationary and continue so in a so-called latent state for long periods. In every case of pulmonary tuberculosis the larynx should be examined for a possible lesion; and in doubtful cases a tuberculin test should be made or the larynx be inspected frequently if specific treatment is instituted for the lung affection. If specific treatment is instituted as early as possible in pulmonary tuberculosis, a coexistent laryngeal lesion, if it be not advanced, will not as a rule give unfavorable emphasis to a prognosis.

OBSERVATIONS ON ELECTRIFIED MILK AND ITS USE IN INFANT FEEDING.*

BY WILLIAM ALBERT NORTHRIDGE, M.D.,
Visiting Physician to St. Christopher's Hospital for Babies and Brooklyn Seaside Hospital for Children.

ELECTRIFIED milk is a milk rendered clean and pure, and sterile or nearly sterile by bringing it in contact with an alternating electric current for a short period of time, by running it through a machine called the purifier which carries the current.

The direct current has no effect upon the milk, but the use of the alternating current kills the bacteria, so that the city Edison supply cannot be used until run through a transformer and then on through the purifier.

This machine is tubular in shape and about the size of the lower three-fourths of the smallest hot water boiler, such as we see in some houses, and is divided into several compartments by the curved plates surrounding the electrodes by means of which the current is applied to the milk.

The apparatus is connected by pipes with a Burrell heater below and the cooling machine above.

The whole process as I viewed it at the dairy is as follows: The milk comes to the city in the usual forty quart cans and is about thirty-six hours old. It is strained through sterilized cotton batting into a large mixing vat. The milk is now heated to a temperature of 120° F. (actual reading of the thermometer at the time of my visit), and at this temperature goes into the purifying machine at the bottom through a small round hole about 36 c.m. in diameter, and on up through the insulated chambers and through three round holes in the ceiling of each chamber at which points of passing from one chamber to another the milk is brought in contact with the current.

The milk is said to be exposed to the current but for a few seconds. It runs through the machine at the rate of from eight hundred to twelve hundred quarts an hour, coming out of the top at a temperature of from 150 to 159° F. This is apparently an electrical pasteurization and this heating of the milk would appear to be the weak point in the process.

By means of a pipe at the top of the purifier the milk is carried to the cooler, from which it drops in steady little streams to the bottling machine below which fills and caps the bottles, the human hand not coming in contact with the cap or with the milk at all during the whole process.

The milk thus treated is probably electrically pasteurized and shows practically the benefits of electrical sterilization without the drawbacks of heat sterilization. It is sterile or near sterile, appears to be easily digested, the cream masses are very well subdivided, and it keeps sweet longer than ordinary milk. It tastes good and its price is that of ordinary milk—nine cents a quart.

The possible drawbacks are as follows:

It is claimed that it will keep sweet four times as long as ordinary milk. There is a temptation for some dealers to sell the milk as long as they have it on hand without regard to its being a few days more or less old, as some do now with pasteurized milk. Or, old milk might be run through the purifier and

*Read before the Brooklyn Pediatric Society, May 24, 1911.

after being thus renovated, might be sold for fresh milk.

It is probably a pasteurized milk and perhaps has all the drawbacks of ordinary pasteurized milk. Time alone will tell.

Some of the advantages of the milk thus treated appear to be:

Its apparent digestibility: its perfect test tube digestibility, equal to that of raw milk. Its comparative freedom from bacteria, and its pleasant taste. The fact that it is not touched by the hand from the time it leaves the creamery in the can until it reaches the consumer, and the fact that babies seem to thrive on it, in so far as my limited experience with it goes to prove. How long they would continue to do so, I do not at present know.

Another advantage that is claimed is a more minute sub-division and separation of the cream masses, with an increase in the cream line from 20 to 30 per cent. I did not observe this myself.

Finally another advantage is that the price is low, nine cents a quart, or the price of ordinary milk.

LABORATORY TESTS.

In booklets which the Goucher Electric Purifying Company, the makers of the purifying machine, have published, I found certain chemical and bacteriological investigations and tests as to the efficacy of the process. I quote therefrom: From a report made December 1, 1910, by the Lederle Laboratories ,New York.

Test of the purifying process by the killing of streptococcus pyogenes in milk.

Three samples of milk were taken, one of raw milk, one of raw milk inoculated with the streptococci, and one sample of inoculated milk purified by this process.

The sample marked raw milk after two days showed a bacterial content of 910,000 per cc.

The sample marked raw milk inoculated showed a bacterial count in two days of 1,070,000 per cc.

The sample marked purified milk showed a bacterial count in two days at 37° C. of 3,400 per cc. Five days at 20 C. showed 18,000 per cc.

Bacteria of the bacillus coli communis type not present in 1 cc. inoculations of lactose bile.

Streptococci were found present in 0.1 cc. inoculations of lactose bile.

No streptococci were found on the 1:100 dilution agar plates incubated two days at 37° C.

The average bacterial efficiency of the purified milk in this test was 98.6 per cent.

Same laboratory report on the killing of staphylococcus by the process of purifying the milk, showed an average efficiency of the purified over the raw milk of 97 per cent.

A test made in the same laboratory of the efficiency of this method of purifying milk containing the bacillus typhosus showed the sample marked purified milk, after two days at 37° C. to contain none; after five days at 20° C., 200 per cc.

The average efficiency of the process for killing the bacillus typhosus (Johns Hopkins) in this test was 98.8 per cent.

Same laboratory reports on the efficiency of this method for the killing of the bacillus tuberculosis, human type in milk; Guinea pig inoculated with the infected raw milk died and an autopsy the inguinal and mesenteric glands, the liver and spleen were positive.

Guinea pig inoculated with the same milk after it had been run through the purifier. Autopsy.

Inguinal glands, negative; Mesenteric glands, negative; Spleen, negative, Liver, negative.

A report from the same laboratory on the killing of the tubercle bacilli, bovine type, in milk showed the same negative results after the purification of the milk by the process.

The following from a published report from the Ferguson Laboratories, New York.

Milk received from the Goucher Electric Purifying Company.

No. 19,140 K, marked "before." Bacteria per cc. 80,000.

No. marked 19,141 "after," bacteria per cc. none.

Sterile sample, No. 19,142 K, marked "after," bacteria, per cc. 300.

Report does not state how many days the plates were held before counting.

Several of the reports state that the milk is "sterile" after treatment.

DIGESTIVE TEST.

At St. Joseph's Hospital, Yonkers, Pathological Laboratory, March 2, 1909. Dr. Goldham, the pathologist, reports as follows: Digestion at room temporature with artificial gastric juice plus rennet (time 100 hours).

1. Raw milk, fresh, digestion, 50 p. c.
2. Goucher purified milk, digestion, 50 p. c.
3. Perfectly pasteurized milk, digestion, 30 p. c.
4. Sterilized milk, digestion, 35 p. c.

Digestion at 37° C. for 100 hours.

1. Fresh raw milk, digestion complete.
2. Electrified purified, digestion complete.
3. Perfectly pasteurized, digestion 90 per cent.
4. Sterilized milk, digestion 95 per cent.

It will be noted that if this milk be found to not have the nutritional drawbacks of a pasteurized milk in infant feeding that it would immediately step into the class of certified milk, for that purpose, which last reason is, of course, our reason for being interested in it.

I have used the electrically purified milk in five cases in infants with the following results:

CASE I:—E. O., admitted to the Babies' Hospital ill with gastro-enteritis chronica. Age on admission fifteen weeks. Weight on admission eleven pounds 2¾ ounces. She lost weight steadily, having much diarrhœa until March 15, 1911, when she was down to 8 pounds 8¾ ounces. Her food was then changed to electrified milk ½, whey ½. Six ounces of this mixture every two hours. She weighed on March 17th, 8 pounds, 13 ounces, a gain of four and a half ounces.

On March 19th, weight 9 pounds, ¾ ounce, a gain of 3¾ ounces.

March 21st, weight 9 pounds, 7 ounces, gain of 6¼ ounces.

The stools had by this time changed to a soft greenish yellow and had diminished in number.

On March 23d, weight was 9 pounds, 12 ounces, a gain of 5 ounces.

On March 25th, weight was 9 pounds, 12¾ ounces, a gain of ¾ of an ounce,

On March 27th, weight was 9 pounds, 13½ ounces, a gain of 1 ounce.

March 29th, weight was 9 pounds, 10½ ounces, a loss of 3½ ounces.

Stools were greenish yellow and slimy, three daily.

March 30th, weight 9 pounds, 10¾ ounces, a gain of ¼ ounce.

April 2d, weight 9 pounds, 12½ ounces, a gain of 1¾ ounces.

April 4th, weight 10 pounds, 5¾ ounces, a gain of 5¼ ounces.

April 5th, weight 10 pounds, 5¾ ounces, a gain of 4 ounces.

April 8th, weight 10 pounds, 4¼ ounces, a loss of 1½ ounces.

April 10th, weight was 10 pounds, 3 ounces, a loss of 1¼ ounces.

April 13th, weight was 10 pounds, 4 ounces, a gain of 1 ounce.

April 15th, weight was 10 pounds, 7¼ ounces, a gain of 3¼ ounces.

April 17th, weight was 10 pounds, 5 ounces, a loss of 2¼ ounces.

April 19th, weight was 10 pounds, 5¼ ounces, a gain of ¼ ounce.

April 21st, weight was 10 pounds, 9 ounces, a gain of 3¾ ounces.

April 24th, weight was 10 pounds, 14¼ ounces, gain of 4¾ ounces.

April 26th, weight was 10 pounds, 13¾ ounces, loss of ½ ounce.

Child taking her food poorly.

April 28th, weight was 10 pounds, 11 ounces, a loss of 2¾ ounces.

On May 1st, weight was 10 pounds, 14¾ ounces, a gain of 3¾ ounces.

Defecations were thin.

May 3d, weight was 11 pounds, ¾ ounce, a gain of 5 ounces.

Stools much better.

May 5th, weight was 11 pounds, ½ ounce, a loss of 2¼ ounces.

May 7th, weight was 10 pounds, 15½ ounces, loss of 2 ounces.

May 9th, weight was 11 pounds, 3½ ounces, a gain of 4¼ ounces.

May 11th, weight was 11 pounds, 6¾ ounces, a gain of 3¼ ounces.

May 13th, weight was 11 pounds, 8¾ ounces, a gain of 2 ounces.

May 15th, weight was 11 pounds, 12 ounces, a gain of 3¼ ounces.

May 23d, weight was 11 pounds, 12 ounces, the same.

Her general condition is now good. No diarrhœa and she has gained 3 pounds, 3½ ounces since placed on the electrified milk-whey modification.

CASE II:—Helen T., admitted to the Babies' Hospital, January 20th, 1911, aged 4 months.

Diagnosis, gastro-enteritis chronica and malnutrition. Weight on admission, 6 pounds, 11½ ounces.

On March 15, 1911, the infant was still in poor condition, but had gained some in weight to 8 pounds and ¼ ounce. The stools were greenish yellow and curdy. I ordered a modified electrified whole milk (1/6), whey 5/6 mixture, six ounces every two hours. Up to this time the infant had been gaining and losing off and on. By March the 20th there was a gain recorded of 6¼ ounces, and the stools were reported yellow, soft and less frequent. By March 27th, the weight was down to 8 pounds 3 ounces, a loss of 3½ ounces, and the chart showed a report that the child cried for more food.

On March 28th, the strength of the food was increased to whole electrified milk (1/5), whey (3/4) strength, seven ounces of this every two hours. By March 30th, she had gained 2¼ ounces. On April 3d, 3½ ounces more, to 8 pounds, 8¾ ounces. The sools were still yellow and soft.

On April 9th, the food was again increased in strength and she was given whole electrified milk ¼, whey ¾, seven ounces at each feeding. Onn April 10th, she was found to have gained five ounces and now weighed 8 pounds, 13¾ ounces; stools yellow and normal. By April 17th, her weight had increased to 9 pounds, 1¼ ounces, a gain of 3½ ounces.

On April 24th, the weight was 9 pounds, 4¾ ounces, a gain of 3½ ounnces. The food was again increased in strength to whole electrified milk 1/3, whey 2/3. On this she continued to gain steadily with normal stools.

On May 8th, weight 9 pounds, 4¾ ounces.
May 15th, weight 9 pounds, 14½ ounces
May 23d, weight 10 pounds, 3 ounces.

The child's general condition is good and the stools are normal. She has gained 2 pounds, 2¾ ounces since being placed on the electrified milk modification. She is still on it.

CASE III:—Joseph A., 5 months old, admitted to the hospital, October 26th, 1910, in a miserable condition, ill with gastro-enteritis chronica and malnutrition. Weight on admission five pounds. Under treatment and on various foods he had lost and gained until on March 15th, nearly five months after admission, his total weight at the age of ten months was seven pounds ten ounces. On account of recent losses in weight he was then put on a modified whole electrified milk (¼), barley water (¾) being used as the diluent. He was ordered seven ounces every three hours of this mixture.

On March 19th, he showed a loss of 1¾ ounces.
March 21st, he showed a loss of 7½ ounces.
Stool shows consistency.

By March 23d he weighed 7 pounds 9¾ ounces, a gain of 9½ ounces. Stools frequent, yellow green, soft. On March 29th, he weighed 7 pounds, 12½ ounces. On March 31st, he weighed 7 pounds and 15 ounces. Stools loose and yellow.

On April 4th he suffered an attack of diarrhœa and lost 3½ ounces. On April 6th he was weighed and had gained to 7 pounds, 14¾ ounces. Stools small and yellow and soft.

On April 13th, he weighed 8 pounds, 3¼ ounces.
On April 19th, he weighed 8 pounds, 5 ounces.
Stools yellow and soft.
April 24th, weight 8 pounds, 6½ ounces.
April 26th, weight 8 pounds, 10½ ounces.
April 28th, weight 8 pounds, 10¾ ounces.

On May 7th, the strength of the food mixture was increased to whole electrified milk (1/3), barley water (2/3), and on May 9th, the weight had increased to 8 pounds, 15½ ounces. On May 11th, there had been

another increase in weight to 9 pounds, 5 ounces. May 23d, present weight is 9 pounds, 10 ounces, being a gain of two pounds since the electrified milk was used. His general condition is now good. He is still on the mixture.

CASE IV:—E. R. This is a typical case of congenital syphilis, five months old on admission to the hospital. She had been going down hill as these cases do sometimes and had lost weight on various food mixtures from 8 pounds 14 ounces to 6 pounds, 13½ ounces, when on the fifth of the present month, my assistant placed her on electrified milk 1/3, barley water 2/3, 5½ ounces of this food every two hours. She is taking fifty ounces of this food daily. She has slowly gained in weight until at this writing, she has been on the food eighteen days and has gained 6½ ounces. She is at present very ill. Her stools are small, soft and greenish-yellow, where they were formerily green, curdy, thin and slimy. She may or may not improve further, it is hard to tell. She is still on the food.

CASE V:—G. H., 14 months old. Entered the hospital ill with gastro-enteritis acute, bronchitis and eczema corporis. Aside from these ailments he was a typically healthy infant. His weiight when placed on electrified whole milk was 17 pounds, 5 ounces. His present weight is 19 pounds, 11½ ounces, showing a gain of 2 pounds, 6½ ounces since he was placed on the milk. He is cured of all his ailments except the eczema. He is still on the milk.

With the exception of the last, these were all cases of a very serious character, indeed of such a character as to form quite a severe test of the milk.

It may be noted that all five cases gained in weight and that all except the syphilitic case (which latter has but recently been placed upon the milk) are on the high road to recovery. The milk has done well by them. Of course, the number of cases is too small and the time too limited to prove much as yet, but enough has been shown to demonstrate that the milk be given a more extended trial.

I personally fear that it will be found that milk thus electrically treated is so heated as to diminish its nutritional qualities, and for that reason, if this prove to be the case, can not be used for long periods of time as an exclusive food in infant feeding, but it certainly adds a near sterile milk which has not been boiled, to our armamentarium.

402 Washington Avenue, Brooklyn.

Thyreoid Extract in Rheumatoid Arthritis.—Cases of the "chronic villous type," as described by Schuller, says Wilson (quoted in Charlotte Medical Journal, July, 1911, from British Medical Journal) are benefited when we note also, harsh dry skin, crisp hair and husky voice.

[This connotes a change in dermal osmosis—water being harmful. In the progressive type of polyarthritis which seems characterized by smooth, soft, pliable skin, due to infection (?) we have another syndrome, one in which bathing gives relieve.]

Wilson gives thyreoid and reports two cures.

Sodium Citrate Milk.—Mann, in Guy's (Charlotte Medical Journal) says he employs citrate of soda in whole milk and does not need any modification of percentages. 400 cases are quoted.

CHOLERA AND SUMMER COMPLAINT.

BY ELMER LEE, A.M., M.D., NEW YORK.
Late Chairman Physiology and Dietetics American Medical Association.

THE writer visited Russia during the epidemic of Asiatic cholera in 1892 to study the cause and treatment of that disease and was accorded every opportunity to pursue his studies. His treatment at that time was an experiment based on hydrotherapy, copiously using water for drinking, frequent bathing, bowel flushing and hypodermic injections. While this gave some encouragement as a better plan of treatment in choleraic disease it did not satisfy the expectations and was abandoned and a newer system has been studied and perfected.

Summer complaint usually refers to the diarrhea of infants and children happening in the hot season, but liable to occur at any time of the year. Diarrheal complaint is not limited to the young, but belongs to all ages which is known under different names and with variation in symptoms according to the condition that surrounds the case. Bowel inflammation accompanied by watery purgation comes under the classification of Cholera and the various forms refer mainly to age and peculiarity of the symptoms associated with the attack. For the sake of clearness the list will be given.

Cholera is a general name for the acute intestinal diseases characterized by a large discharge of fluid matter from the bowels with vomiting, cramps and fever. Cholera is divided into a number of forms. 1, Asiatic cholera, a severe, malignant disease with excessive vomiting, rice water discharges, collapse and frequent death. 2. Bilious cholera, a form of the discase attended with excessive discharge of bile. 3. Cholera Infantum the "summer complaint" of infants and young children with pain, fever, purgation and prostration. 4. Cholera morbus similar to Asiatic cholera. 5. Simple or Summer cholera the diarrhœa with cramps, purging and collapse common in the late summer or autumn.

Who has not seen infants, children, the young and the old in pain, vomiting, purging, fever and prostration? My service in the wards of the intestinal division of one of the large metropolitan hospitals as a young doctor is not to be effaced from memory.

When it came my turn to assume charge of that division it was with fear and trembling on account of an overpowering consciousness of incompetence. The most of the day and sometimes half the night was devoted to my cases. I gave them the best I had and sought incessantly for what would confer benefit upon them.

Any college professor lecturing in the hospital or there as a visitor was certain to receive an invitation even an entreaty from me to see these cases. There were many cases of diarrhœa, always a long line of them, bed after bed, ward after ward and no end to the new arrivals and never a minute of respite from anxiety.

We talked of them in our little medical society within the hospital, the books on the subject of intestinal disorders were sought and read; every doctor happening within range was boned for light; nothing seemed to save the sick from suffering and the weak from dying do what we could results were unsatisfactory and many patients succumbed.

Each interne had a run of the division for two months at a stretch. It was enough, all he wanted and it frequently happened that the morning visit to the ward showed a vacant bed from a death during the night. Never were young doctors more devoted to the city's poor for a patient received as many as six to ten visits in a day as there was no limit to service.

The diarrhœa and dysentery division as it was named was the dread of doctor and nurse not on account of work and attention required not for any inherent fear of infection or contagion not because deaths often occurred or because there was smell and muss and heavy labor but because we felt ourselves weak and helpless.

What could there be that would be more depressing to the doctor or discouraging to the patient than a sense of not knowing what to do and when seemingly everything had been tried and not much gained? The superintendent, nurses, physicians and druggist were quizzed in the emergency for light on treatment and the drug store ransacked for possible curative galenicals, powders, pills, barks and astringents.

When the worst came to the worst opium was the sheet anchor as it had the effect to calm anxiety and remove consciousness of pain but it did not solve the riddle of how to cure the diarrhœa and dysentery or save life. Often a patient admitted in the evening would be dead before morning or die within three or four days after admission.

Hospital experience then and now runs on much the same with some change in the treatment but little or no improvement in the picture or happenings of ward life for the alimentary canal type of cases. Cholera, cholera morbus and summer complaint or cholera infantum are quite frequent in the hot climate and in summer in the northern climate and the name refers to a difference of degree or severity rather than any distinction in the type of disease.

Inflammation of the intestines causes a watery, bloody, foul discharge according to the intensity of the disease and the weakness of the patient. If the inflammation is limited to a small area of intestines recovery is almost certain and almost no treatment is required. It is in those cases where there is extensive inflammation which call for great medical skill, knowledge and accurate treatment with rapid work.

While in Russia a case of uncertain intestinal disease admitted as cholera to the St. Catherine Hospital was placed on the table and when the abdomen was opened the large intestine blew out with a loud noise for it was so distended with gas and the wall was as thin as paper that when it was punctured the gas escaped with a hissing sound like breath forced between the teeth. The next day the man was dead. Death was due to an extensive chronic inflammation of the colon.

Intestinal diseases are prevalent at all seasons and at all ages and among every class. Chronic inflammation of the bowels gradually wears out the patient while acute choleraic inflammation destroys life in a few hours to a few days. The principal cause of death among young children is bowel affectation from fermentation and inflammation.

When diarrheal cases of a similar nature occur in the same place and within a noticeably short period it is common to refer to it as epidemic if less frequent and with wider intervals of time it is endemic or sporadic but it does not imply that disease is transmitted from one to another.

Boards of health as well as a good many physicians do everything they can to scatter and keep alive the supposition that intestinal disease originates with a milkman or some member of his family and that it is peddled out in milk to the customers along his route. Another supposition is that public water soiled by a privy at its source or along the bank of streams carries summer disease germs.

Still another explanation is that the disease germ is on the fruit and vegetables of peddlers or others who sell these articles to the people and raids on fruit and vegetable stands by the agents of Boards of Health in the summer season often destroy foods that are fit and good causing loss to the dealers.

There are those who allege that bowel disease is caused by germs which are in beverages, ice cream, or other confections usually on sale to the public. The prevailing theory is that disease of the intestines arises from a germ or microbe that is in water, on fruit and vegetables, candy, slate pencils, fingers, hands, in the air, milk, foods, carried on the legs of insects, flies, ants, and borne on the dust of the streets and roads and that such disease is contagious.

So there are germ or microbe killers, antiseptics or antiferments, offensive smelling chemicals, insect poison, fly killers, serums, vaccines, bottled water, distilled and other kinds, patent food, sterilized milk, individual drinking cups, dishes, towels, soap, spurting drinking fountains, isolation, quarantine, fumigation, barricades, shotgun dead line, even murder in cases of such as disobey the rules with dope and shift of many curious varieties that drain the private purse, burden the public treasury, oppress the sick, tax and eat away the people's substance in a glorious fight against "windmills."

What goes into the intestine from table, bar, counter, stand, many times a day, day after day in the nature of food, drink, beverage, confection, chemical, drug, much of it improper, imperfect and unfit are the real factors in the cause of cholera. Think of this side of the question, think of the contrary mixtures, the ill assorted variety of bad food and poisonous drink heaped day after day upon the stomach and intestines and would it not be strange were there no internal derangement and is it not surprising that so many escape? Is this not the reasonable explanation of cholera?

Fat and grease, milk and cream, oil and butter, coffee and tea extract, scorched, burned and tainted animal flesh, stale fowl and game, stored meat and eggs often unfit and spoiled, animal milk instead of breast milk for infants, milk that is chilled by ice, jolted, reheated, run through pipes, again chilled, jolted some more, milk that is one to three days old, then again warmed up or cooked and doctored with lime, salt, boracic acid —so is it any surprise that infants, children and adults have stomach and bowel complaint? Country milk fed to farmers' children is free from some of the objections we recite against city milk.

The underlying cause or root of intestinal disease can be traced to cell hunger, cell starvation, cell atrophy. The human cell of life is fagged out for want of sustaining nutriment. The food as prepared and used is unfavorable for cell life and they fail to obtain what is required for life and work. Mistakes in feed-

ing cause weak and decaying cells and a soil favorable for inflammation and the watery discharge that is associated with bowel disease.

Disease of the bowels starts from nothing so much as an imperfect system of table food inherited from ignorant ancestry and sustained by a vogue built up on rich cooking, much animal food, heavy gravy, oil, butter, lard-shortened crust, drinks, methods and habits that are not elegant, favorable or natural.

What is the cure for summer complaint and cholera? Fasting is frequently prescribed but why not feed the weakened patient, why not conserve the strength? Natural food feeding is the safe plan of treatment. Without nourishment the case runs both the risk of disease and starvation. Scant, sparse and imperfect eating will doom the patient in many cases for too little to eat will not keep the body strong or make it healthy.

The prevention as well as the cure for the infant is an abundance of breast milk or if that is not obtainable for any reason then an abundance of sweet milk from the fresh cow as direct as possible to the baby. Should it be iced? Certainly not. Not iced at the dairy to prevent germs from growing in it? No. Icing injures the cell formation of the milk globule more than germs from the atmosphere besides air ferments or germs are not debarred from milk by ice and cold has no disastrous effect on them.

Should the milk for infants not be Pasteurized or heated to the edge of boiling? Certainly not. Heat to that degree breaks down the milk formation or denatures it and produces a coagulation or crystallization which is the condition that is favorable for fermentation.

And should there not be salt or lime or other chemical added to milk for the infant? Why? Is there salt or lime added to breast milk? The child prospers on sweet, wholesome, fresh milk nothing more is needed as nature provides what is suitable and the cells of the body are satisfied with this provision as it stands.

After weaning the young child is ready to pass with convenient promptness to the mild, bland foods of the vegetable kingdom for its nurture and growth. Fresh, non-iced, non-sterilized milk for the infant but soil grown and sun ripened aliment for older children as for the adult life if normal food for the health of the stomcah and bowels is to be considered.

The children of the people of a future time may as far surpass those of this generation as a sun exceeds a planet in glory if child life is born, bred and reared on food which is safe and favorable for human nutrition, food derived from the garden and field and used correctly in that natural order and sequence for man and child which is suitable according to age, season and climate.

Philanthropy is lavish, extravagant, reckless for do we not see every luxury provided for mankind such as the public libraries, churches, theatres, schools, hospitals, orphanages, prisons, reformatories, courts, museums, galleries, parks, excursions, baths, floating nurseries, literally everything yet with it all the prime cause of disease want and wretchedness is hunger and starvation which philanthropy or science has not understood or prevented.

Lack of instruction in the selection and preparation of simple and wholesome food, together with excessive use of coffee, tea and other drinks which includes poluted water is responsible for the greater number of choleraic diseases. Any form of mal-nutrition endangers the health of the intestines and life itself and the remedy of first importance will usually be found to be a revised diet which excludes animal food and a restricted use of drink of every nature.

OUR BROTHER THE DENTIST.

BY JOHN B. HUBER, A.M., M.D.

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I SOME time ago attended an exhibit of The Dental Hygiene Council of the City of New York; and I recall the incident with much gratification. I was especially impressed with a number of legends, in which humor and instruction were judiciously blended —like those blends of tea that are so delicious; these legends were placed on the walls amidst pictures of ideal tooth brushes, of decayed teeth (which were not at all ideal), and other graphic presentations. As thus:

"Let me fill the teeth of a nation, and I care not who makes its laws."

"A man is known by the teeth that he keeps."

Scripture was invoked, as follows: "Keep thy mouth with all diligence."

"There is an ideal of clean teeth, as there is an ideal of salvation; and they are not so far apart."

"The condition of the teeth is imperiling the future of the civilized races."

"A brush in time (picture of a mammoth tooth brush) saves nine" picture of nine very ragged teeth).

"Teeth are the sentinels of the body."

"Ninety per cent. of adults have defective teeth."

"See the dentist once in six months—better once in three months."

"Only eight per cent. of the American people have ever sat in a dentist's chair." (I mentally congratulated my dentist brethren on the way things would pick up when those remaining ninety-two per cent. would see the light.)

"There are 40,000 dentists to 90,000,000 people in the United States." (There, I reflected, much better off is the dentist than the doctor; there are three of the latter to one of the former—and so unequally and so injudiciously distributed!)

Indeed he who would have run through that exhibit would not even have had to read. For example, smiling ladies (mostly of the theatrical profession) were photographed with excellent teeth; and there were, for purposes of comparison, other series of ladies with fair teeth, bad teeth and no teeth. There was a large photograph of the greatest statesman of the age, with his molars generously displayed, with the legend: "Theodore was the first to preach the conservation of our natural resources; waterfalls (picture of a waterfall) and quarries (picture of a quarry) are no more important than teeth" (picture of teeth).

One more instance: "The mouth contains from twenty to thirty square inches of surface, which may harbor all kinds of infection." (I recalled here an obliging fellow-student from Texas, who permitted (for

purposes of experiment) our professor of bacteriology to make cultures from his buccal cavity, and especially from the dental interstices; twenty-six varieties of bacteria were isolated, and I doubt not that, if this colleague survives to-day, the number has increased to fifty-seven varieties, or thereabouts).

Yet the teeth of our generation are no worse, probably not so bad, as those of the race have ever been. In several respects we have made a most gratifying advance. Not so many years ago the calling of a dentist was considered a business rather than a profession. But a generation ago the work was mostly extractive and destructive of teeth; and only a few pioneers sought to preserve and even to construct servicable teeth. Some little scanning of history may here be *apropos*: Cicero, in his treatise "De Natura Deorum" ascribes the invention of tooth extraction to Aesculapius. (A purely mythical character, be it observed. An indiscreet colleague on the witness stand was asked by one of those astute lawyers if he had read the works of Aesculapius, and recklessly answered that he had; whereupon the lawyer informed the court that Aesculapius was the god of medicine and had, of course, never written a line.) Hippocrates was perhaps the first to mention dentistry; and he wrote much about toothache. Long before the dawn of Greek civilization, however, dentistry was a perfected art. The Phœnicians transmitted it to the Etruscans. It would seem that something very like modern bridge work was done in ancient Italy; and so effectively that it has lasted thirty centuries! Artificial crowns have been found in Etruscan tombs; and artificial dentures, so the British Medical Journal assures us, go back to a remote antiquity. Professor Guerin exhibited some such specimens before the International Congress in Rome; and in the museum of the University of Ghent are a set of artificial teeth which were found in a tomb at Orvieto, with jewels and Etrucan vases, which were made probably some sixty centuries before the Christian era. In Dr. Lambra's collection of antique surgical instruments there is an artificial denture found in a tomb at Tanagra, near Thebes, which is believed to belong to the third or fourth century before Christ. Teeth stopped with gold have been found in Greek tombs. In the laws of the Twelve Tables, made by the Roman Decretals in 450 B. C., it was expressly forbidden to bury or burn gold with dead bodies, except when used for wiring the teeth. In constructing false teeth the ancients resorted to bone and horn; sometimes human teeth were employed.

Benzoni found in some mummies artificial teeth made of sycamore. In the first century of our era false teeth were very common among the Romans. Martial ungallantly twits a lady with removing her teeth every night. Dentistry shared in the decay of the arts and the sciences during the Middle Ages. For example, St. Louis, who died in 1270, although he was only 55, had but one tooth in his upper jaw. French surgeons, notably Ambroise Paré, led in the revival of dentistry. Louis XIV's dentist used only gold instruments in operating on that august patient's jaws. After Paré the highest dentistry was in the hands of surgeons, extraction being left to barbers and quacks.

A somewhat vain physician observed to Diogenes (in that halcyon age when the world was young) that his art was of great honor and antiquity. "Indeed it must be so," rejoined that peppery philosopher of the tub, "since it can with impunity kill so many people." Dentistry has had few death-certificates to its credit; nevertheless its great antiquity seems beyond question.

To-day, however, dentistry is a fine science and a great profession—one, indeed, much more essential to healthy living than it is oftentimes given credit for. Many a systemic infection has resulted from decayed teeth, the cavities of which and the interstices between which make most pernicious foci for the propagation of bacteria; it is as true for the buccal cavity, as the medical profession has proved it to be true for the naso-pharynx and the tonsils—that many a systemic infection has had its source in such tissues, when they are unhealthy. And the reverse is now being thoroughly understood to obtain. It is now known beyond peradventure that many a catarrh of the upper air passage is by reason of eructations and effluvia in indigestion. Early this year I had the honor to be invited to the meeting of a Dental Society, in which Dr. J. Morgan Howe (D.D.S.) maintained in effect, that there are cases in which all the tooth brushes and all the dentifrices in the world would not keep clean the teeth. The saying "clean as a hound's teeth" cannot be by reason of artificial means of cleanliness; for the hound does not employ them. The hound's teeth must be clean because dyspepsia does not trouble him. So it is that oftentimes teeth are unclean; and dental caries sets in because of the acid eructations involved in functional gastric disorders.

The proper chewing of food, which is so essential to normal living, is of course impossible unless the teeth are sound. Here one discerns a vicious circle. Unsound teeth cannot properly grind food, which must thus enter the stomach untriturated; such food is bound to set up a dyspepsia which then, as we have seen, reacts upon the teeth.

Particular in the tuberculous, whose restoration to health depends upon proper alimentation, one cannot hope for good results when the teeth and their alveoli are in pathological condition. We oftentimes fail, here as elsewhere, to get good results, because of ignoring what appear to be inconsequential details in medicine. If consumptives are to recover, they must have their teeth made serviceable and as sound as it is possible to make them. How great a factor is this, is constantly impressed upon me in my hospital service; practically speaking, there isn't a man in my wards with a decent or a fairly serviceable set of teeth.

I recall here an excellent paper on medical phases of dental disorders by Dr. S. A. Hopkins, in the Journal of the American Medical Association. Hopkins made no doubt that the eruption of the first teeth does sometimes disturb the delicate organism of the growing child; but this would be reduced to a minimum were there no other etiological factors. We frequently fail to diagnose the morbidities which are due, either directly or reflexly, to dental disorders. When eye and ear cases present themselves, a careful buccal examination should be made. In children of the school age, at least one-fourth of the cases of earache are either originated or continued by the presence of diseased teeth. The disturbing influence of the sixth year molars is not generally recognized, nor is it im-

portant; still their eruption may occasion a mild tonsillitis or a stomatitis or even a cervical adenitis—which latter may conceivably furnish a nucleus for a latent tuberculosis. Still we should not operate for such glands—certainly not until the child's teeth have fully appeared and the mouth has returned to its normal state. During the next seven years of the child's life the condition of the mouth and teeth is largely responsible for its health and proper development; the teeth then suffer most and afford special opportunities for the reception and propagation of mouth bacteria. Caries of the first teeth is very rapid; and considering the number of infections that are liable to occur at this period we may reasonably assume that the buccal condition may have an important bearing on the development and spread of infection. Constant absorption from diseased gums and carious teeth must lessen resistance; and then the tubercle bacillus may secure an implantation. The eruption of the twelve year molars is usually unnoticed; but (rarely) it may cause severe constitutional symptoms, especially when maxillary development is tardy and there is pressure resulting. Antrum abscess very often has its origin in disease of the posterior superior teeth; nasal disease may also have its origin from these and the superior incisors. Neuralgia and unusual and sometimes obscure ocular affections may be traced to this source; and the constitutional disturbances are often severe and serious. Suppuration from a wisdom tooth is always to be dreaded because of the tendency to burrowing; life may even be jeopardized from this cause, which may induce vague, typhoid-like symptoms, or those simulating malaria. In trigeminal neuralgia especially, should the dentist and the physician unite both in consultation and for treatment.

Dentistry is indeed a very essential factor in modern civilization; and it is in this country, where the science and art have reached fullest development, that its dignity should ever be upheld. In this regard the Germans have indeed behaved atrociously and most ungratefully—toward the American dentist, who has taught the German practitioner pretty much all he knows about teeth. The German Supreme Court has decided that dentistry, when practiced by the American, is a trade, to be distinguished from the profession followed by the German dentists, who are all "approved." The latter are placed in the "doctor" category, and are not to be regarded as in trade. American dentists, whether doctors or otherwise, are in the Court's view, not in the same class; they are not organized by the state, and are not subject, like the German doctors, to a special court of honor. They are consequently placed in the category of "traders in healing," and can compete like other traders in the ways laid down by the civil law. In truth, however, the American dentist in Germany does exceedingly well; and it is certain he does not, certainly no more than the German "approved" type, fall short of the high standard of ethics and conduct that mark the healing profession in all civilized coutries.

In England they are juster and more grateful; they would make medicine and dentistry inseparable specialties of the same beneficent science and art; it is reported from across the pond that "the dentist and his profession have now been raised to the level of Aesculapius and his art, a consummation celebrated by a jubilee dinner of the Odontological Society," which had accepted the invitation to become an integral part of the Academy of Medicine.

A remarkable advance in dentistry is that made by the orthodontists; these specialists in the dental field are said now to number about sixty among their 40,000 brethren in the United States. They are the tooth straighteners; and I should judge from a report of the Bureau of Municipal Research that they have abundant reason for existence. It would seem that of five hundred school children between 14 and 16 who have applied for their mercantile papers, 456 were found to have 2,808 unsound teeth—over six to a child; and that of these unsound teeth 257 could not be saved. It is considered that these children, representing the average of the metropolitan schools, have been improperly fed from their infancy, that the condition of their jaws is by reason not of poverty but of ignorance. Dr. R. C. Newton, of Montclair, has observed that the children of savages, Hottentots and Eskimos are better equipped with teeth than civilized children because they are never fed on "pap." Our children are no longer made to chew crusts, corn bread, Boston brown bread and rye and "injun"—provender requiring mastication and insalivation. The infant foods, the predigested breakfast foods and the starchy concoctions that give the teeth no exercise, are blamed. During childhood and youth the maxillæ, both upper and lower, are in a plastic state; such bone tissue can be wielded almost like wet mortar or cement. Yet such faults of diet and their results can be corrected by the orthodontist, who can achieve an artificial conformation of the jaws. He can make them to spread; he can reduce prominent teeth; he can correct defective "bites;" and if the whole set be too large for its constricted sockets, he can correct the difficulty by an ingenious system of wiring and temporary pressure. Especially have persistent adenoids and other abnormalities of the upper air passage conduced to irregular jaws; here is work for the orthodontist, though the physician should long before have removed the adenoids and made the respiratory passages healthy.

The dental profesion in this country has been and is conducting a most noteworthy campaign for oral hygiene in the public schools. This campaign was opened in Cleveland, Ohio, in March of 1910, under the auspices of a committee of the National Dental Association. The efforts of this committee to secure the appointment of district dental inspectors and to provide for widespread dental education on oral hygiene in the American public schools had their inception in 1898. Of all countries in the world the pioneer in this movement was—Darkest Russia; she established a system of inspection of the teeth of the children in the public schools as early as 1879. Since then Germany, Great Britain, France, Belgium, Holland, Denmark, Italy, Japan and New South Wales have instituted similar inspection. In this country the State of Massachusetts has instituted popular lectures on dental hygiene and prophylaxis. New York City maintains clinics for the care of the teeth of the children of the indigent poor; other cities have followed this example. Besides, many cities in the Union have instituted dental examinations in their public schools.

THE CAUSE OF STAMMERING.

BY DR. WM. LILLIENDAHL, NEW YORK.

NINE-TENTHS of all cases of this affliction come from a too highly organized nervous structure; hence, strictly, stammering is the object of treatment for the physician just as much as any other disease or neuroses.

Stammerers have generally a fine, high-tension nerve fibre; they are very susceptible to nervous derangements of all kinds; they are exceptionally alert and brisk in mind, and make good scholars; they have a body material which vibrates in response to the slightest impressions, which is not the case in a body of a coarser brain, nerve, and body material—the kind of material of which the body is composed determines the facility with which energy radiating from the brain and nerve cells is transmitted throughout the tissues to perform the body functions. The cause of this great functional vitality is often inherited—sensitive nervous tissues are undoubtedly acquired from the parents, and a child with this inherited tendency easily acquires stammering. For, such highly organized children are the natural victims of many disturbances in the nervous centers, and none more so than the brain centers which control speech; it is the speech which first betrays nerve derangements. Of the greatest importance is it to ascertain just what it is that is affecting these vital nerve centres (especially the sexual nerve centres) of the body. These possible physical causes are the duty of physicians to find and treat, and thus remove the cause, in more than seven-tenths of cases curable early. The diagnosis and treatment of these causes must be left to the physician—each case may vary.

DIFFERENT PHASES OF STAMMERING.

But, once acquired, stammering takes on a new phase: the original cause has weakened with the advance of age, because like all other disorders in it the tendency of the body is to equilibrium, and many recover normal speech when the nerve centres are quieted and calm down: this is seen in the fact that those afflicted always enjoy almost complete immunity from speech difficulty when their health is improved—the better the health the better the speech—and some do obtain permanent relief by simply improving the general health.

The usual course is as follows: the long continued speech defect makes the child conscious of his defect, and now there are two troubles to consider, the nervous physical one and the mental state which soon gets into a chronic state of fear, and the physician has now a double thing to consider, and the mental is often the most troublesome. It is the purpose of this article to indicate just what this mental trouble is.

THE MENTAL ATTITUDE OF STAMMERERS.

Naturally, the "mind" takes its impressions through the five senses: feeling, hearing, seeing, smelling and tasting—body and brain impressions are vital to the mind for they determine just what it is, so that if these impressions are disturbing we have a "disease of the mind"—such impressions may come from a poor digestion, bad habits, shocks to the nerve centres, etc., and they produce similar conditions of a disturbing nature in the mind—they may become lasting impressions in the mind—they are distorted and abnormal just like the body troubles are—they cause in the mind confusion and want of body poise—the mind refusing to work in harmony with the body, as it normally does.

Thought and its expression in language are inseparable—when we think the natural impulse is speech, and the clearer we think the more accurate we express ourselves in speech. Now, stammerers think in circles—their thoughts travel like as from a centre of a wheel (the hub), and spread out to its rim along the many spokes of the wheel, *and all at one time.*

This has been noted by Dr. Scripture, who stated it in this way: speech when normal proceeds in a direct course from the brain to the vocal organs, and in stammering this course is indirect — the thought to be expressed takes an abnormal course, and he shows just what this course is by a diagram, and when the attempt is made to utter the thought there is confusion.

But, clearer does it seem that the hesitating speech corresponds to a hesitating mind; stammering in speech indicates a stammering thought in the mind; confusion of utterance shows that there is likewise a mental state of confusion. The actual condition is as follows the mind which normally wills to express a single thought, at one time, is really attempting to express many thoughts at the same time; for, in the stammerer's mind there is not only the original single thought which it started out to express in language, but it is saddled with some of these: there is the thought of the effect on others, the words that are being used, and all overshadowed by fear of failure, etc.—with all of these in his mind at one time can we wonder at the speech confusion?

This is vitally important, if we expect to treat this disorder from every standpoint, and it indicates clearly the methods of treatment to effect a cure. It is almost useless to try to correct the trouble only by training the vocal organs. Please observe, that *stammerers can speak fluently when alone at any time* — the vocal organs are all right, and to try to cure the defect in this way only is certain to result in many failures. Undoubtedly, some stammerers do talk in an abnormal voice, and try to speak way down in the throat, but when alone they can speak in just that same way fluently. The record of 167 cases, under treatment by vocal training methods show failure in more than 80 per cent. It can truly be stated that the other 20 per cent. were of lesser severity, more easily treated, and might have responded to different impressions than the treatment was intended to convey to them. "Why is it," stammerers have frequently said to me, "I am puzzled at the fact that I can speak well and without hesitation when alone, and only hesitate when talking to others." How futile to try to cure by vocal training—there is no defect in the vocal apparatus.

TREATMENT.

A proper course of treatment should con ist in, first and of *Prime Importance,*

1. *Treat Physical Defects*—the Physician's duty.
2. *Train the Mind* to Think and Express itself in a normal way—one thought at a time, by exercises of concentration on the subject. These are simple and easy to follow.

3. Of minor importance but useful, especially when it is better to improve the enunciation, correct the vocal direction, etc., are

Breathing Exercises. And last of all, and least important, is

4. *Vocal Placement,* or how to produce a clear tone.

In another article, to follow this, I shall give more in detail the treatment.

130 West 32d Street.

The Early Diagnosis of Insanity.—C. F. McDonald (Med. Rec., Jan. 7, 1911) finds the significant factor to be a change in the mental characteristics of the individual. Any prolonged change in mental or moral tone should excite suspicion, especially if the patient be of insane or neurotic stock. Among the premonitory symptoms are disturbances of the bodily functions, morbid emotional manifestations, and alterations in the individual's mental traits. Somatic functional disturbances express themselves in various ways — night terrors, insomnia, headache, tinnitus, vertigo, fibrillary tremors, clammy hands and feet and other vasomotor aberrations, anorexia, indigestion, constipation and so forth. While these phenomena, especially insomnia and constipation, are frequently prodromes, they may nevertheless occur in those who never become insane; they are therefore not to be regarded as positively pathognomic.

If the tendency is to mental exaltation or mania, the emotional changes are to unnatural buoyancy, loquacity, undue levity and morbidly quickened mental operations, the patient appearing perhaps unusually bright.

If the tendency is to mental depression or melancholy there are gloomy forebodings, morbid introspection, hyperconscientiousness, senseless self-condemnation, a morbid aversion to friends, morbid suspiciousness, irritability and perhaps a vague sense of impending evil. At this stage marked alterations of character are seldom wanting; the devout individual becomes profane; the refined immodest and regardless of the decencies of life; the staid become capricious and vascillating; the sociable, unsociable; the good-tempered, irascible; the industrious indolent; the temperate intemporate; the cheerful, sullen and morose; the level-headed business man embarks in senseless enterprises. Such symptoms are in striking contrast to the individual's normal mental status, from which they indicate a departure: when observed they should always excite suspicion of impending insanity; whilst they may vary as regards number, order of occurrence and intensity, their presence is always significant as danger signals, especially in those predisposed through inheritance. Neurotic diathesis, previous attacks of insanity, head injury, alcoholism, drug addiction, syphilis, mental shock, prolonged mental strain and worry, general ill-health and the like.

It must here be borne in mind that the range of normal mental action is far from narrow. Only when the physiological limitation is passed and the patient enters into a mentally pathological state can we consider him insane. Whenever there is a prolonged departure from the mental normal, unexplainable on any other ground (such as drunkenness, delirium, the effects of drugs or other toxic agencies, will a diagnosis of insanity be warranted. Alcoholism and delirium tremens are not insanity in the medical sense, although they have been classed as toxic insanities, and although the law recognizes them as an excuse for crime.

Again, the patient's statements regarding himself are often unreliable and misleading, owing to delusional ideas or misinterpretation of what actually took place, even though in other respects he may be perfectly truthful. The truth or falsity of certain statements made by the insane can only be determined by evidence from other sources, as by so doing we may, for example, avoid certifying that an allegation of pregnancy made by a young woman is an insane delusion, when an examination would evidence the pregnancy. Yet many of the delusions and hallucinations expressed by the insane are so manifestly irrational as to need no further corroboration. And sometimes insane persons can conceal their delusions for a time, realizing that the exhibetion of them may result in their being declared insane and thus deprived of liberty and the control of their affairs. Rarely do we find a case of true insanity that did not at some stage reveal the delusional state, as evidenced by the declarations, manner or conduct of the individual. Among the most common delusions among the insane is that they are not insane.

We must also take into account certain negative symptoms, as reticence, obstinacy, sullenness or stupidity—any of which may be significant in the diagnosis, especially if such condition is not natural to the individual. Note especially the facial expression; the contrast in facial expression in mania and melancholia is in itself a lesson in diagnosis; the expression of the eyes and their pupillary reactions to light and accommodation, the speech, writings, motor functions, reflexes, etc.—any of these may in themselves indicate certain forms of mental disease. The pulse and temperature should also be observed; persons laboring under the delirium of fever, meningitis, etc., have occasionally been committed to institutions for the insane through negligence regarding these signs of disease.

Other conditions which have been mistaken for insanity are prolonged intoxication, delirium tremens, the delirium of cerebral meningitis, and of the various continued fevers, sunstroke, hysteria, and the delirium which may precede death in certain diseases and in old age.

Rural Medicine.—Who was it? Catullus? who sang, what matters it for dinner if I have a salad? So much do the times change and we with them, that salad and salad days now mean things entirely the reverse of rural. Rural, in the days of the Roman Catullus, carried a significance of leisure and elegant seclusion. The dweller in rural districts to-day is a hayseed, and the country doctor by many is felt to be inferior, when, as a matter of sober fact, the rural practitioner of medicine and surgery has a greater command, a wider knowledge, of the therapeutics and mechanics of our science than the limited although specialized brother of large towns. The latter says plainly: I do not operate for appendicitis, I do not remove adenoids, I do not take confinements, nor do I set broken bones. Go to the man who does just these things.

But the rural practitioner suffers not only from imputed disadvantages which are not real, but from real ones which are not only imputed, but also keenly recognized. The graduate in medicine hesitates to

leave centers of culture and study, for remote and unsocial districts, to struggle with adverse tides of prejudice and squabbling.

Education has done much. Farmers are as well read as bankers upon current medical problems; indeed their experience in practical biology renders them doubly fit to receive physiologic instruction. But the difficulties of expense, due to sparsely settled regions, and the inevident harms consecutive to hygienic mistakes in such open sections, increase the troubles of scientific workers in rural neighborhoods.

The New England Lyceum idea is spent. Nowadays, country people are of two classes, chiefly: those very poor, working very hard, and tired of the effort, and those who go into the country to rest, equally tired.

Among these the college man can scarcely find any but a sedative influence, and he misses the environment of mental aspiration and emulation. Then comes the issue: can he develop in such soil an atmosphere which will be what his ideals seek? Many men fail at this point. And the country doctor becomes the hard-working drudge he is accused of being; on an income of $500 a year.

If, however, the man in the flush of youth and intellectual prowess determines to create in his rural district just the intellectual environment to which he struggles as a goal of professional and social nobility, to what source can he look for sympathy?

He will find the promising youth of the village setting sail to happier climes. Each coterie centering in family relations, or religious lines of cleavage, each group of business interests establishing separate systems of crystallization, so that among monoclinic and triclinic and rhombic, no harmony is possible.

What next can be essayed? Or shall the practitioner withdraw into a shell? Many rural men have solved these questions. Nevertheless, it is a remorseful fact that the country doctor does not receive the laud which accrues to his city confrere. May this situation be in part due to the incomplete fraternity existing among rural medical men?

It is a fact that in a county not fifty miles from our metropolis and boasting of a township the second in the United States in importance in wealth, there exists now no medical society, and no apparent possibility of forming one, although its resident medical men hold membership in a general society embracing some four counties and including largely residents of a part of New York City.

When country practitioners view so coldly the opportunities to help themselves what is the reason, and to what end will such indifference eventuate?

Problems of aviation, sanitation, criticism of literature, drama, and philosophy, seized upon by the laity and belonging to us by virtue of physiologic conquest—are these nothing to the medical mind as they bear directly and vitally upon the care of our patients?

Septic Abortion.—G. Winter (Zentralb. f. Gynak., April 15, 1911) takes vaginal cultures as soon as fever develops in a case of abortion. The secretion is deposited from the lower part of the vagina, into an ordinary throat culture tube; the bacteriologist can report in 24 hours. Hemolytic streptococci should especially be sought. All coagula are removed and the vagina is disinfected. Should the cultures show complete absence (or very few) hemolytic streptococci in combination with many saprophytes, emptying of the uterus through a patulous cervix is not contraindicated. If the cervix is rigid forcible dilation is not indicated. Should the culture show pure hemolytic streptococci all intrauteric manipulation is strongly contraindicated. Should severe hemorrhage make interference imperative the uterus is first rendered as free as possible of bacteria by prolonged irrigation and then emptied manually. The curette is strongly contraindicated. Perituterine inflammation contraindicates interference. Among 100 consecutive cases with bacteriological examination there were 13 death from infection; 4 pyemias (not fatal); 1 peritonitis (not fatal); 18 parametric exudates; 10 cases of endometritis; and 54 normals. 43 cases showed streptococcus; hemolytic in 20 cases. In those cases where there was active interference the mortality and severe complications were increased. From a study of the effect of non-interference even in long protracted cases of incomplete septic abortion Winter concluded that (except for mild symptoms of intoxication) no harm resulted; and that delay greatly benefited the patient, especially in the presence of hemolytic streptococci.

Mountain Sickness.—Prof. Aggazzoti, in the Revue Scientifique discusses the etiology and the symptoms; and makes some therapeutic observations. Mountain sickness is not to be confounded with fatigue, inflammation of the respiratory tract, irritation of the skin, nor effects of strong light. Its sole cause is the rarefaction of the air at great heights. It affects mountain climbers and aeronauts; no doubt many an aviator has met his death, not through faults in his machinery, but by reason of mountain sickness. This disease can be produced artificially at sea level. The symptoms are fatigue, somnolence, rapid pulse, aggravated nausea, dimness of sight, fainting, headache and tachycardia. The movements of those affected become uncertain and tremulous; and there is a lack of precision in voluntary action. Rarefaction of the air reduces the quantity of oxygen carried by the blood to the tissues, and diminishes the proportion of carbonic acid gas ordinarily contained in the blood. In 1870 M. Paul Bert, in a *cloche pneumatique*, submitted to a rarified air corresponding to an altitude of over five miles, by inhaling oxygen. Like experiments, but during actual ascension, were made by three baloonists: two of whom died despite inhalations of oxygen and azote. Aggazotte uses a mixture of oxygen, 67 per cent.; carbonic acid gas, 13 per cent.; and azote, 20 per cent. He was able to push the rarefaction of the air as far as permitted by the powerful pumps in the Turin laboratory, without any noticably unpleasant symptoms. These observations are of great importance, by reason that mounting to great heights is no longer a mere adventure or amusement. Railways are now being carried to the summits of lofty mountains; and a day will come when rails will be laid over the Himalayas and the Andes. Aggazzotti's mixture can then be on tap, for the traveler's comfort; and as progress is made in aerial navigation, with such a remedy at hand one can rise far greater altitudes without discomfort or danger.

Ext. Pituitary.—For neurasthenia and neuroses this opotherapeutic agent is being tried out. It is indicated in asthma, unless the asthma is renal or cardiac, pulmonary or hepatic, in which instance the primary lesions demands attention.

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THE EXAMPLE OF THE MEDICAL PROFESSION TO OTHER PROFESSIONS.

ONE of the best recognized precedents of the medical profession, has been modesty. There are times, however, when it is justifiable to throw modesty aside and to proclaim what we have done, in the hope of instructing and stimulating others.

To the legal profession, we want to say this:

The medical profession, privately and by organized effort on its own account and by co-operation with governmental and private philanthropy renders it possible for everyone, however poor, to have skilled assistance promptly in times of physical suffering. Should not the legal profession organize dispensaries so that the poor may be assured of justice?

The physician, unless he be densely ignorant or lacking in conscience always tries to prevent disease. Does the lawyer, with the same exceptions, always try to prevent litigation.

The physician, discovering in his private attendance on cases that there is some general law that can be applied to prevent suffering, makes every effort to have that law carried into effect. Does the lawyer, finding from the same detailed experience that the intent of the law to do justice, often fails through inadequate or incorrect provision, make the same effort to secure legislative reform?

To the Clergy, we wish to make these observations:

The medical profession insists, so far as possible, that competition among its members should be in accordance with ethical principles and customs, dictated by common sense and experience. It condemns and ostracises, so far as possible, the physician who attempts to take an unfair advantage by advertising methods which mar the dignity of professional conduct. It does so, not because the exact means of holding one's self out as a practitioner are important but because the general use of ordinary methods of exploitation would involve heavy expense, divert energy from professional study and practice, and lower the general tone of the profession, while their employment by individuals constitutes a means of securing an unfair advantage over the more modest and ethical practitioner.

There is no profession in which decorum, dignity and fair dealing are more important than the ministry. When a minister attempts to secure larger audiences and hence, ultimately, a larger salary, by sensational sermons, privileges to members not ordinarily considered proper or in keeping with the dignity of a consecrated edifice, dodgers bearing his portrait and titles, posters more appropriate to a grocery or meat market, why should not the decent, ethical, respectable clergy take stern action, not only in their own behalf but to maintain the respect which the people ought to bear toward the church?

The medical profession has learned and is applying both in colleges and in meetings for mutual instruction, the fact that lecture or essay is not the best method of instruction and that, when used, it must be based on thorough study and must present definite information instead of glittering generalities. There is a general complaint on the part of the clergy that the people, especially men, do not attend church. May it not be that this is partly due to the maintenance of the old custom of a lengthy sermon for which a Bible text of a few words or sentences is dragged out of its context and made the excuse for a more or less eloquent discourse, the gist of which is that it is good to be good or bad to be bad. The clergyman is no longer an educational leader. He speaks no longer to intellectual inferiors but to an audience which is, on the average, as well educated formally and as well trained in habits of thinking and reading as himself. The men, especially, are trained six days in the week to a contempt of verbiage and to an insistent demand for facts, stated as concisely as possible. Many of them are trained in habits of scientific accuracy and deep study. The Bible, even to the non-religious, is an intensely interesting book, all the more so in the light of advanced language study, and the side-lights of contemporaneous history and archeology. Many difficulties in the way of religious faith would be banished if ministers simply kept abreast of modern researches. The mere fact that the word Adam means man, is closely related in derivation and form to the word for clay or dirt, that its use as a proper noun seems to be begun in translations quite arbitrarily, would remove one stumbling block that every clergyman recognizes. The fact that contemporary records, even portrait busts of some of the foreign kings mentioned in the early

chapters of Genesis and the ruins of the Tower of Babel have actually been found and established by unpreujdiced students of archeology, reinforces the Bible as a dependable historic record. When we learn from archeologic research that in the flat lands of Asia Minor, tumuli and buildings less than a hundred feet high were commonly spoken of as reaching the Heavens and that the swallowing of a man by a whale or fish was a common saying, approximately equivalent to our saying that a man has gone up Salt Creek, more obstacles to faith due to the literal interpretation of figurative expressions, are removed. Would not more men go to church if, instead of a sermon, the Bilbe itself was read and explained with the same depth of study and thoroughness of research that a physician would employ before he attempted to read a paper before a medical society?

VACCINATION AGAINST TYPHOID FEVER.

IT is now a general order that every officer and enlisted man in the United States Army (some seventy thousand in all), who are not already immune to typhoid fever, must be inoculated against this disease. Some time ago Secretary of War Stimson set the example by having himself inoculated. This is another most important step in the fight against a disease which is, considering its frequency, its fairly high mortality, its tendency to relapse and its dreary and long drawn out convalescence, one of the most serious with which mankind has to contend. It is odd indeed how custom, and familiarity with a phenomenon, blinds us to much of its intrinsic terror; half or a quarter as many cases of smallpox, as there are cases of typhoid among us, would certainly occasion something like a communal frenzy. Yet typhoid, which is really a more formidable disease than smallpox, enacts the part of a perennial scourge, whilst little comment is occasioned by it and there is little evidence of popular concern. Of course we would not have a panic over any epidemic; yet more attention than is forthcoming should be paid so serious a disease as typhoid fever. And every hopeful step toward its suppression should receive the general co-operation and sympathy.

The efficacy of inoculation with antityphoid lymph, as a preventive of typhoid fever, is now a fact established beyond peradventure. One Army division of 17,000 men, during its recent experience in Texas, after the inoculation of all not theretofore immune, had immunity from this disease and enjoyed exceptionally good health. And this is a supreme test; since otherwise, in an army encamped for any length of time, many cases of typhoid fever and camp dysentery are certain to develop. If thus an army division, such as went to Texas at the time of the recent Mexican revolution, could be saved from the familiar scourge of armies, there would seem to be good reason for extending the same preventive measures to all parts of the service. It is easily demonstrable that an army free from typhoid fever (though it would be perhaps for the first time in the history of warfare) is a possibility.

It is by no means unlikely that in the not distant future inoculation against typhoid will be a procedure as general as is now vaccination against smallpox. Until this beneficent practice obtains other methods of typhoid prophylaxis should not be neglected. Typhoid is essentially a filth disease; and as essentially an ingestion infection. On these two observations all typhoid prophylaxis, apart from inoculations, must be based. The community should take all possible precautions against the contamination of food and drink, whether with sewage or by the unclean visitation of flies.

It is especially urged that, apart from the soldiery, certain classes of the body politic should undergo antityphoid inoculations without delay. Indeed, the practitioner should advise all who consult him to undergo this simple procedure—but emphatically so the young, who are most prone to typhoid infection.

Next come those who are more than ordinarily exposed to the danger of contracting typhoid fever, as physicians themselves, nurses, orderlies and helpers in hospital service. After these should be considered those young men and women who leave home to go to college or boarding school, those who make long trips away from home, and those who take summer recreation trips. Typhoid is very well known to be common among the people of these classes; wherefore they had best be vaccinated against the disease, by which means many deaths and much suffering would be obviated.

As for the rest of the community: undoubtedly the disease would in very large measure be avoided, and deaths from it prevented, if everyone submitted to inoculation, except perhaps in those regions where typhoid fever is unknown and where the people never leave their homes. Where sanitation has entirely stamped out typhoid (are there in civilization any such places?) such inoculations are of course superfluous; but where this ideal condition does not prevail, it is believed by the Journal of the American Medical Association, that inoculations "will be advised with increasing frequency by conscientious physicians, and will be increasingly demanded by people who intend to avoid sickness and death from typhoid fever."

The period during which the protection against the disease persists is not definitely established. It is very probably indeed effective for at least two years; "and there is very strong reason for believing that

a considerable degree of protection, though not so complete protection, is afforded for many years, or even during the rest of the individual's life."

WATER WITH MEALS.

THIS writer is "vacationing" at a hotel on the New England Coast, where for his sins he has found himself among a great many ladies of variegated ages, similarly unoccupied. In wending one's way—as the romanticists have it—through the maze on the hotel porch, one's ears are met (if not assailed) by snatches of conversation, in which all kinds of inconsequentials find place—such as, the efficiency of "new thought," the amiable features of Mr. Taft, the question of digestability of hard-boiled eggs, whether Mrs. Brown's jewels are paste, whether Mrs. Smith was not justified in seeking a divorce by the immoral (or is it the unmoral) conduct of the reprobate Smith, the equally burning question of the natural hue of Mrs. Jones' hair, the orthodoxy of the Reverend Josiah Jenkins and the cuteness of his real nice curate, the wonderful skill of the great Doctor Slicemup in abdominal operations (why do women like to dwell on such operations?), the reprehensibility of the book known to ill-fame as "Three Weeks," and so forth.

In the city this writer, like most of his colleagues, has been accustomed to that species of attempted petty larceny known as the sidewalk consultation; he was now to become the victim of a case of hotel porch consultation. As he was making between chairs (as rapidly as dignity would permit) for a secluded corner in a far off end of the porch, he was regularly held up with a shrill and insistent demand for his opinion on "a piece in the paper" relating to the use of water with meals. Having (with the geniality under trying circumstances for which our profession is so justly famed) given the hold up party as litttle enlightenment as possible, he took away the newspaper in which this aqueous subject is featured, and has it now before him; he purposes to calm his disordered psychism by submitting a review of the matter in these columns.

Professor P. B. Hawk, Pysiological Chemist of the University of Illinois, is alleged to advance a new theory!—that water in large quantities should be drunk at meals; he is, we learn with surprise, "the first advocate of water at meal times. Nearly all other medical men discountenance the use of water at meals."

Now, Professor Hawk's thesis is, as reported, a one-case paper; that is, it is based on experimentation in the case of a single individual. This should at once, of course, prejudice the scientific mind unfavorably to his findings, no scientific deduction would be reasonable that would not be made from at least a score of cases. Yet we are expected to believe that his experiments will result in revolutionizing "ideas that have obtained longer than any one can remember." The subject of these experiments, a young man of 22, was placed on normal and constant diet for thirteen days. Water was given sparingly at first; but the supply was increased, with beneficent effect, until the subject was drinking three pints at each meal and his usual pint between breakfast and lunch, between lunch and dinner, and between dinner and bedtime. This made six quarts of water a day. This, contrary to the classic opinion of know-nothing physicians, increased rather than diminished, the amount of and the potency of the gastric juice; the subject's weight was also increased; his bodily activities were stimulated so that "separation and distribution" of food were improved, and the system kept free of toxic poisons; these poisons, indeed, were "discharged with greater velocity and freedom." A saving caution is that the water should not be gulped, "so as to distend the stomach, which is not a good thing to do." We are finally assured that "it takes a longer time to circulate the result of Dr. Hawk's experiments than has elapsed since he made them, so that most people may not know for a long time yet that the old idea is not so and that they can drink all the water they can hold with their meals."

A few observations seem here apropos: It is hardly precise, to say the least, to intimate that physicians in general advise water-abstinence at meals. Most physicians advise water in moderation at mealtime; and water as freely as thirst demands between meals and at bedtime, more than usual being drunk in hot weather. Any advice of any kind, that tends to excess of any kind, is unwise. To state, again, that the more water one drinks at meals the more will the gastric juice increase in amount and potency is to state that the more a substance is diluted the more of it there will be and the more will its strength be increased—a statement palpably absurd. Unlimited inhibition of water will certainly increase weight; so will unlimited beer, but the increased weight will be in terms of flabbiness, and abnormal fat; so will unlimited quantities of poor milk increase the weight of babies, but the increase will be in terms of flabby unmetabolized tissue, such as resists infection poorly, leaving that infant worse off than others not so fat. Unquestionably water, in amounts sufficient for normal metabolism (a normal thirst being here the criterion), is a diluent, aiding the skin, the kidneys and other emunctories in getting rid of toxins, but excessive water drinking is unfortunate in ways sometimes beyond retrieval. A stomach once markedly distended (as in those who drink beer immoderately) cannot return to normal proportions; nor will such a stomach ever after functionate quite as normally as before. Again, it were unfortunate, to say

the least, to put upon the kidneys (among the most delicate organs in the body) a greater work than they can bear. Sooner or later a dam that is overpressured is bound to burst; so in like circumstances will a kidney break down. A lung that is in stress can help itself by coughing; an outraged stomach can empty itself. A misused kidney has no such outlet. As to that 22 year old specimen: It is amazing what abuse the youthful organism can survive; its factors of safety are mercifully most varied and illimitable; but it were unwise indeed to apply the results of experimentation on youthful subjects to those in the extremes of life and to those who may (perhaps unknowingly) be sufferers from functional or organic affections. Few indeed among these latter would long survive six quarts of water a day. In water drinking as in all things else, a sweet reasonableness should obtain. Moderation and common sense — here is a team which, properly harnessed, and given free rein, would remove from existence pretty much all its misfortunes.

THE SKY SCRAPER AND SANITATION.

IT is a fact, considered not nearly as much as it should be, that the tall building intended for human living or for human working, or both, is oftentimes most subversive of health. The problem of congestion in large cities has become many-sided and progressively more difficult of solution; and a way out of the trouble has been proposed in the building, in congested districts, of tenements much higher, perhaps twice as high as the present average, which is six stories in large cities.

High buildings have thus far solved fairly well the problem of commercial congestion; but there are beginning to be very decided objections to the unlimited erection even of the business skyscraper. And yet it is held that, by analogy, the tenement skyscraper would solve the problem of congested homes. But this it will not do, not by any means; and the idea should be emphatically scouted. Commercial skyscrapers have up to the present time been mostly isolated structures; there is now danger that they will become numerous, forming together lofty and continuous canyon walls in cities, with the result that the exclusion of light, sunshine and pure air renders the lower stories uninhabitable even for the working hours of a day. As we shall see, even now the attendant evils, such as dark or poorly-lighted rooms, where pernicious artificial illumination must be almost wholly used (however bright the sky above), evidence that only a limited number of business skyscrapers can be available. And such objections as these are obviously still more valid and potent regarding tenements, which must be occupied night and day, by infants, children and youths as well as adults, and must be adapted to all the purposes of domestic life. The exclusion of light, pure air and sunshine from living apartments, especially in buildings facing on narrow streets, would mean the prevalence of disease among the tenants, progressively with the age of the building and the increasing bacterial development in the "dark bedrooms."

Some observations exceedingly apropos have been made by Mr. R. P. Bolton in *The New York Times*. It is demonstrated that height is not always profitable to the builder and the investor. It is not within our province to dwell upon this phase of the subject; still, our colleagues who may contemplate investments may well be informed that mere heighth of construction is not a financial advantage in itself, nor is a tall buiding necessarily a paying investment; oftentimes this is far from being the case. Many very tall office buildings in the lower part of Manhattan Island are very poor investments; one of them (built a score of years ago) returns less than 1¼% upon its value; a conspicuous Wall Street structure returns a bare 2½%. Besides, these buildings are threatened by the continuous advancement of taxation. The "cheesebox" building—a structure run up on narrow plots of land, occupies as much of the whole area of the site as the law will permit, extending as nearly into the milky way as the speculator's resources or the liberality of the loaning company will allow, and depending for its future as to light and air upon the lack of enterprise of its neighbors in erecting similar structures. The metropolitan "down-town" office buildings, crowding against one another, have successively deprived each other of so much air and light that the lower floors in many of them are now rented at greatly reduced rates—if they can be rented at all. In a very high-class Broadway office building one of these lower floors is now rented as a furniture wareroom; in another (just off Broadway) the fourth story, by reason of poor light, was vacant for nearly a decade.

Apartment house evils are of the same nature, only more vicious by reason that we have here to consider, not business offices, but homes. Mr. Bolton points out that most apartment houses are erected totally without regard to the effects to be afterward experienced by the erection of contiguous buildings, so that many rear apartments remain vacant, whereby the building becomes unprofitable, to say the least. Usually the investor (who like as not buys the property of the enterprising and astute builder) begins with apartments temporarily well filled while the structure stands isolated, enjoying the stolen light and air which do not belong to it.

The common practice of building to the largest possible extent upon a given price of real estate is wrong; more money is to be made and a better return

secured upon a very much smaller degree of building on any site in congested districts, as in Manhattan Borough.

Again loft and workshop buildings have been built up throughout the middle lower portion of Manhattan Island; and in their acres of space all kinds of trades and manufacturers have been established, such as cannot properly be housed in these circumstances. Such buildings do not have and cannot have (by reason of the narrow and limited area which they occupy) proper facilities for the egress of their occupants in any emergency, such as a panic or a fire. The addition of fire escapes is a mere patch upon an unsuitable structure; adequate stairways and elevators (were they provided) would occupy 25 per cent. of the whole property. Witness the recent ghastly fire in New York City, wherein so many wretched working men and women lost their lives!

They seem to understand these matters better in the West, where a shrewd operator in real estate demonstrated that on his property he was making more money by a building occupying less than sixty per cent. of the site, than he would have made on a building occupying nearly the whole of the site.

SPIRITUALISM.

THE belief in intercourse with spirits of the dead, as we to-day understand the phenomenon, seems to have begun with Swedenborg, who professed to speak with the mighty dead of all ages; and we make no doubt he was sincere in his professions, although modern psychology and psychiatry finds nothing supernatural in them. Before his time alchemists, magicians, *et alii*, assumed to enjoy spirit communications; but this they did not claim (at least not generally) regarding the spirits of erstwhile human beings, but rather as to creatures of the elements, or such as were held to be parasitic on mankind. In the Middle Ages proof of spirit intervention was found by believers in witchcraft, in the pitiable misunderstood convulsions of epileptics, in epidemic "visitations" among overwrought religious communities; but the spirits who thus intervened were rarely held to be of human origin; they were not considered the souls of men and women, but either divine messengers or satanic emissaries.

Trances such as the Swedish seer manifested were soon found to occur in connection with the practice of "animal magnetism;" and early in the nineteenth century "magnetic clairvoyants" everywhere claimed the privilege of conversing with the dead, the secrets of the spiritual world thus being imparted to those fortunates who engaged them. As such practices increased, trance phenomena, implying the power to hold spirit communications, were no longer the special privilege of a few peculiarly endowed as to morals and intellect. The physical manifestations which began in the United States in 1848, with rappings and the like, spread to Europe; and within a few years a glorious and effulgent (though somewhat unsteady) zenith was reached. Then the movement rapidly declined, largely by reason of the study which physicians and other scientists gave to the obscure mental states from which the belief had originally had its rise. From 1880 to 1890 spiritualism seemed fairly defunct. But it was revivified in the last score of years mainly by reason of three factors: the trance revelation attributed to Mrs. Piper; the physical manifestations of Eusapia Palladino; and the great labors represented in the two massive volumes on "Human Personality," by the late Frederick W. H. Myers.

The Piper and Palladino phenomena we feel justified in dismissing with the observasion that for most minds trained to accurate observation, to sound judgment, to logical reasoning, they can have no scientific value. Not so, however, the posthumous publication of Myers; wherefore we welcome the critique of his findings by the late Frank Podmore,* than whom no wiser, fairer, more open-minded expert ever dealt with the problems connoted in the occult. Podmore studied through many years consistently and continuously in this field; he applied inexorably the laws of scientific evidence to every such phenomenon he came upon; and many a psychic fallacy has succumbed beyond any hope of resuscitation, spiritual or otherwise, after his effective blows.

We have not here space to pursue this subject, so vital to much of humankind; we may, however, briefly sketch the viewpoints of these two great thinkers (Myers and Podmore) regarding the "subconscious mind."

To all but the most modern thinkers the human mind has seemed a clear cut, indissoluble, permanent entity. Experimental psychology, however, finds this conception of mind an illusion. Myers fully recognized that human consciousness, as we know it, is a highly composite and unstable thing, having neither completeness nor essential unity. As he thought, consciousness is a selection, like the visible spectrum, accidental, interrupted and variable, from a much vaster potential whole; to him surface consciousness (the only kind we know in ordinary life) seemed comparatively unimportant. He supposed the subliminal consciousness to embrace a far wider range of activity than is open to normal personality. To him the stream of consciousness flowed as it were like an underground river; sleep was no longer to be regarded as a mere obeyance

*The Newer Spiritualism (Henry Holt & Co., Publishers).

of waking activities, but as a phase of personality with definite characteristics of its own; crystal vision, the hypnotic trance, hysteria and pathological states akin to these, opened a door into the hidden life; the improvisations of genius were sudden outbursts of subterranean forces.

Myers claimed to found this theory on induction upon observed facts; but it must be evident to us of this day (with our Palladino and like experiences) that most of the things he observed were in reality not facts at all. And Podmore found that Myers' conclusions were based less on scientific induction than on analogy with the states observed in hystero-epileptic patients. In that larger potential consciousness which we may infer surrounds the narrowest personality (such as suffices for our every-day life), Myers discerned traces of faculties too large for merely terrestrial needs, and signs of guiding powers other than those of the sentient human unit. Nevertheless, aside from a few sporadic instances of latent faculty emerging in dreams, or through planchette and the crystal (data entirely insufficient for any just scientific conclusion) there is very scanty support indeed for the assumption of hidden human personality. The evidence is altogether inadequate that in the normal person there is below the surface any sequence of memories or separate form of consciousness so far organized, or so stable as to deserve to be called a secondary personality. And still more meagre is the evidence of interference with the ordinary workaday operations of the human unit by any such subterranean agencies. The manifestations attributed to the secondary consciousness, automatism, the subliminal self (or whatever other designation we use) are now fairly explainable in the terms of modern physiology and psychology; we are concerned (in most cases at least) with the functioning of lower cerebral centers or the revivification of dormant tracts of cerebral tissue.

Uterine Myomata and Heart Disease.—J. A. McGlinn (N. Y. Med. Jour., May 27, 1911) concludes that a definite entity of fibroid heart cannot be sustained. Uterine myomata occurring during middle and advanced life are practically always associated with sclerotic heart lesions, but these are a part of a general process and are not related to the fibroid. Many of the cardiovascular symptoms in myoma cases are by reason of secondary anemia.

The Madstone for Rabies.—The Attorney General of Kansas recently ordered the arrest of the owner of a madstone if he should attempt to use it on a boy bitten by a dog, and who was taken to him to have it applied; the boy was instead sent to the State University Hospital, where Pasteur inoculations were begun.

RACE MIXTURES.

"BUT indeed," wrote Robert Louis Stevenson, "I think we all belong to many countries; and perhaps this habit of much travel, and the engendering of scattered friendships, may prepare the enthanasia of ancient nations." Thus have the intuitions of the poet and the litterateur correctly "sensed" the processes of nature, essentially beneficent as they are. The ideal of many is a race of absolutely pure blood; but such a race does not exist to-day nor probably ever has, certainly not in many centuries. Authentic history cannot give us an instance of an absolutely pure-blooded race of men. And what is more—such a race would not, should it exist, be as desirable in any sense of the term, as an ethnic mixture. There are those Americans who regard the "mongrelizing" of our population as most regrettable, and to be avoided as far as possible; certainly the strictest regulations should be maintained at our ports to keep out the physically, mentally and materially unfit. But immigrants sound in mind, body and material resources need not be feared.

Of course the purest indigenous American race is that of the Indian, whose racial origin is lost in the mists of tradition and fable; it was probably never pure, but always a mixture. In the composition of our people this indigenous element has been negligible; Indian blood flows in some American present-day veins; but the proportion is insignificant. It is only the transferred European blood that now counts in the Occident. And yet every European race is to-day—as it has probably been since long before the dawn of history—a "mongrelized," a mixed race.

We like to think of the pure-blooded Greek race, which has so gloriously and so beneficently affected the Western world. There is not, and probably never has been for very many centuries, a pure-blooded Greek race. To-day most of the Greeks are not Greeks, and few of them inhabit erstwhile glorious Hellas; to-day, as when the world was young, the Persian, the Semite and what not else have infused "barbarian" blood with that of the Spartan and the Athenian. Mr. Z. D. Ferriman, in his "Greece and the Greeks," observes that no one can say how much Greek blood now survives in Greece; there was never very much of it, though its enormous leavening power made it go very far; as we trace the constant immigration of Slav, Turk and Albanian into Greece, none but a homeopathist could find the original strain in the present dilution. The fact of the persistence of the Greek language is not evidence of ethnic continuity, for language is to-day admitted to be a social, not a racial product. "Within driving distance of Sparta, on a bluff rock two thousand feet high, stands the deserted city of Mistra, built in 1247; about

its ruined castle lie the churches, monasteries and private dwellings of the Franks, adorned with rich French and Greco-Byzantine work, intact, unique." So those Gaulish Crusaders must have impressed their strain upon the Greek blood; and where, moreover, came the Byzantine that is thus coupled with the Greek?

Such is the example of mixed blood which Greece furnishes; nor is there anywhere else in Europe a purer type. If any such exists it must be a degenerated and quite undesirable type. With regard to the American people of to-day we observe that the Englishman who supplanted the Indian was a mixture of Briton, some Roman, Gaelic, Saxon, Teuton, Dane, Norman and what not else; nor was the Frenchman, whose course of empire lay from the Land of the Snows southward down the Mississippi to the tropics, a pure type; nor the Swede who settled in Delaware; nor the Hollander who settled in and about Manhattan; nor the Spaniard to the South.

But many are now fearing the invasion, not of the Englishman, the Frenchman or the German (all of whom have now unquestionable proprietary rights to this soil), but also representatives of other nationalities and peoples; not only European, but Western Asian and Northern African as well; many among us are now being worried by the Italian, the Slavic types from Austria, Hungaria, Russia, Roumania, the Balkan peninsula.

Professor Boas, of Columbia University, sheds upon these phenomena a grateful and reassuring light; no doubt these latter peoples (to whom we thus far find it hard to become accustomed) represent a physical type distinct from that of northwestern Europe; and their present social and living standards differ fundamentally from our own. And they come among us in disconcerting numbers — hundreds of thousands every year. Nevertheless, precisely this process of intermixture has been going on throughout Europe during many centuries with obviously beneficent results; the difference in the early European mixtures and that resulting from the modern trans-Atlantic immigrations being in that the former took place at a period when the density of population was comparatively small. Besides, racial and group antipathies are sufficiently potent to prevent race mixtures from attaining too great a rapidity among us.

The concern thus felt by many for the continuance of "race purity" is chimerical and absolutely impracticable. History demonstrates no racial purity anywhere — a fact fortunate rather than otherwise for humankind.

Quinin and Urea Hydrochlorid.—This is recommended as a local anesthetic.

BIBLIOGRAPHICAL

Rural Hygiene.—By Henry N. Ogden, C. E., Professor of Sanitary Engineering in College of Civil Engineering, Cornell University; Special Assistant Engineer, New York State Department of Health; pp. 434, 77 illustrations. New York, The Macmillan Company, 1911.

This excellent book represents "an attempt to put before the rural population a systematic treatment of those special subjects included in what is popularly known as Hygiene as well as those broader subjects that concern the general health of the community at large." We find the modest author's "attempt" to be fully realized; the work is veritably encyclopedic on the subject. Of course it is authoritative, being that of a very experienced teacher and consultant. That it is not at all "dryasdust," but written with uncommon literary charm may be judged from this extract: "It is commonly supposed that good health is the invariable accompaniment of country life; that children who are brought up in the country are always rosy-cheeked, chubby, and, except for occasional colds, free from disease; that adults, both men and women, are strong to labor, like the oxen of the Psalmist, and that grandfathers and grandmothers are so common and so able-bodied that in practically every farmhouse the daily chores are assigned to those aged exponents of strong constitutions and healthy lives."

Manual of the Diseases of the Eye for Students and General Practitioners. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, New York, etc. Seventh edition, revised, with 302 original illustrations, including 22 plates with 62 colored figures. Octavo, pp. 407; $2.00. New York, William Wood & Company, 1911.

The author says that every page of the text of this standard work has been carefully examined, and numerous additions made, in order to bring all matter to date.

A new chapter on "The Ocular Manifestations of General Diseases" also appears.

It is one of the best books, for its purpose, in existence, and is well known as such.

Diseases of the Stomach.—With Special Reference to Treatment. By Charles D. Aaron, Sc.D., M.D., Professor of Gastroenterology and Adjunct Professor of Dietetics in the Detroit College of Medicine; Professor of Diseases of the Stomach and Intestines in the Detroit Post-Graduate School of Medicine, etc. Octavo, 555 pages, with 42 illustrations and 21 plates. Cloth, $4.75, net. Lea & Febiger, Philadelphia and New York, 1911.

The author's objective has been to write a work on the purely practical aspects of gastric diseases, to limit himself to what is definitely known and to exclude mere speculation. Etiology, symptomatology, pathology and diagnosis are introduced so far as necessary to an understanding of the methods of treatment proposed, and space is therefore available for developing the therapeutic sections in full detail. Diseases of the stomach are so universal and are the starting point of so many other evils that every physician needs to be posted on the latest advances attained in this highly progressive branch of medicine. These he will find authoritatively set forth in Professor Aaron's pages,

together with previous knowledge that has stood the test of time, in a word, the whole subject as understood at the present date. He has given the indications for surgical intervention, so that this recourse may be utilized only when necessary, and useless or injurious operations may be avoided. The author's very eminent position in the ranks of American gastro-enterologists will attract wide attention to his important work, which will not disappoint expectations.

Progressive Medicine.—A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in Jefferson Medical College, Philadelphia, etc. Volume III, September, 1911.

The following subjects are treated: Diseases of the Thorax and its Viscera, including the Heart, Lungs and Blood Vessels; Dermatology and Syphilis; Obstetrics; Diseases of the Nervous System.

As usual this publication is full of interesting matter.

RETROSPECTIVE

The Trade Side of Medical Terms.—The New York *Sun* well observes that the confusion in the layman's mind regarding medical terms—probably unavoidable, even when it leads to natural but regrettable error. For example, the man on the street finds it difficult that the name applied to a disease is usually that of the doctor who discovered or analyzed it; his impression of Bright or Riggs or Pott is not of a distinguished medical investigator, but of a man who suffered from a peculiar ailment and perhaps brought it into existence. This does no harm to the discoverers, whose glory is assured in their profession—and also limited to it. It is different when the name of a place is attached to a sickness; for then people cannot help believing that it is infected, and keep away from it. All travelers to Rome, for example, even to-day take the chances of "Roman fever" into consideration. A case that has of late excited some discussion is that of Malta, which picturesque island wishes to attract travelers, and quite fairly too; its climate and situation are as delightful as those of many other places of fame, to which travelers resort; nor can there be any reason why, if the natives provide entertainment for their guests, Malta should not be frequented in winter. Unfortunately, however, the British garrison surgeons discovered the form of intermittent fever (which occurs also in many other places), which they called Malta fever, by reason that their soldier and sailor patients came from that station. The term has become perhaps as widespread as Maltese cross or Maltese cat; and the island has few other associations in the average mind; thus Malta is regarded as a fever spot—which is contrary to the facts and unfair, and stands in the way of the island's hoped-for and legitimate prosperity. To remedy this status British physicians have undertaken to change the name of the fever, which is indeed found wherever conditions favor it—at Gibraltar, on the African coast, in the Levant, in Southern Italy and Spain. They have for some time substituted the term "Mediterranean fever;" wherefore all the hotel keepers around the midland sea are indignant—nor without justice. The new name removes the stigma from Malta in some degree; but applies it to a much wider area. The Midi of France, which has been rather touchy of late years, protests against this British imputation; indeed, no case has ever been known along the whole French azure coast from Marseilles to Nice, whatever may obtain regarding the region of the dead cities; the Italian riviera—all the seaside paradises—also proclaim their innocence. The Paris Academy of Medicine has been obliged, by a request from the British to the French foreign office, to wrestle with the problem of a new name. One suggestion was that it be called "melitose" from the micrococcus melitensis, its specific germ; but that only Latinizes Maltese, and what is worse, puts it in doctor's Latin, which, goodness knows, is already in a sufficiently bad way. Another suggestion is the term "undulating" on account of the temperature changes, which would, however, hardly distinguish it from other forms of fever and ague. Whatever name is adopted, well observes our lay contemporary, "it seems clear that commerce as well as science must be considered; the fever will be as unpleasant by any name."

Delirium Tremens.—S. W. Ranson and G. D. Scott (Am. Jour. Med. Soc., May, 1911) base their treatment on a study of eleven hundred cases. They distinguish in their therapy: an incipient stage with insomnia, restlessness, tremor, occasional hallucinations (recognized as such by the patients); and a later stage of delirium with uncorrected, chiefly visual hallucinations, much inco-ordination, usually fever (100 to 102 F.), slight leucocytosis (7000 to 9000) and profuse perspiration. As to hypnotics; even enormous doses are often ineffective; if a sleep is induced the patient awakens from it with unabated delirium. When the disease has run its course the patient falls into a profound sleep. It is doubtful if this critical sleep can be induced by hypnotics. Chloral hydrate is on the whole of unfavorable effect, the mortality in the 183 cases in which it was used being 2.7% higher (40.9%) than in the 322 cases in which it was not used. Its untoward effect on the circulation more than counterbalanced its good effects. The effect was otherwise upon incipients. Of 112 such patients treated with chloral, only 25% became delerious; whilst of 590 not so treated 41.3% developed delirium. The dose varies from 10 to 30, often repeated every four hours. Bromides and paraldehyde are akin to chloral in their results; paraldehyde is the most effective in preventing incipients from becoming delirious. Morphine (¼ gr. doses) is less effective than any of these; it increases the mortality in the delirious patients and has little, if any, effect in warding off delirium in incipients. Hyoscine (1/100 - 1/50 gr.) is a very dangerous drug, the mortality in the delirious being increased 16.4%. Veronal is the only hypnotic which does not increase the mortality in delirious patients; the deaths were decreased by it 16.4%. It is also superior to the other hypnotics in incipients, only 14.3% of such cases treated with it developing delirium. 38.2% of delirious patients receiving alcohol (whiskey in ounce doses 4 to 6 times daily) died; whilst of those who did not receive alcohol 39.9% died. To say the least, therefore, the question is not settled as against the use of alcohol, which should never be withdrawn in incipient delirium tremens. Of cases of the latter on alcohol 24.3%

became delirious; of such cases deprived of it 44.6% became delirious. Of delirious patients on ergot 28.7% died. In incipient cases only 19.2% of those receiving ergot developed delirium, as compared with 46.9% of those not getting it. The drug was given by mouth, 3j of the fluid extract, repeated every four hours. Ranson and Scott conclude then that incipients should receive large doses of the hypnotics (preferably veronal) whiskey regularly and ergot at frequent intervals—the latter either by mouth or by intramuscular injection; this medication should be discontinued gradually and only after all signs of restlessness and delirium has passed. The delirious patient should receive veronal in moderate doses, and ergot should be given as in the incipient cases.

Some Observations on the Use of Guipsine as an apressor remedy in cases of high arterial blood-pressure.—For a drug to fulfill the requirements of a remedy in cases of high arterial pressure (O. K. Williamson, M.D., F.R.C.P., The Practitioner, May 1911) its action should be marked; it should exercise a long continued effect; its composition should be sufficiently constant to prove reliable in its action—in other words, its effect should be the same when administered in similar pathological conditions; and it should be a safe remedy, free from toxic effects when administered in reasonable doses.

So far as my experience extends these requirements are met in guipsine, a drug obtained from mistletoe (*Viscum Album*).

In my opinion guipsine exercises a marked hypotensive effect on the arterial blood-pressure in many cases, such cases being probably those in which the morbid symptom is to a considerable extent the result of arterial spasm. In other instances the result of its administration is disappointing, the explanation doubtless being that in these cases the clinical picture is almost entirely due to a widespread sclerosis of the arterial system. The effect of the drug often requires some days after the time when it is first administered for its manifestation, and it frequently lasts for a considerable period after the cessation of its administration. In many cases large doses appear to be necessary in order that the maximum effect may be produced. Toxic symptoms are very rare.

Guipsine is obtained from the fresh plant, because it has been shown by Chevalier that the drying of the plant causes a marked decrease in the pharmacological properties. It is invariable in its composition. Owing to the irritating local action of the saponine components gastric administration is preferable to the hypodermic method. It is administered in the form of pills, each being standardized at 5 centigrammes of useful principles, 6 to 25 in the 24 hours.

The Lymph-Nodes. — D. Symmers (N. Y. Med. Jour., May 20, 1911), in an important paper, finds: 1. Primary disseminated epithelioid tuberculosis of the lymph nodes, while rare, is by no means unknown; it occurs as an epiphenomenon in status lymphaticus, however. 2. The histological changes in Hodgken's disease resolve themselves into three stages: the first is characterized by focal hyperplasia of lymphoid cells and is succeeded, among other features, by the formation of multinucleated giant-cells and interstitial connective tissue overgrowths. Although the lesion may not progress beyond this granulomatous stage, cases occur in which the connective tissue stroma undergo such extensive hyaline metamorphosis that the cellular details are obscured and the histological individuality of the process is established only with difficulty; this transformation would appear to represent an attempt at healing. 3. A type of Hodgkin's disease exists, either primarily in the cervical region or in the thorax, in which the growth may invade surrounding structures and irritate secondary nodules in distant parts. In either issue the process admits of at least two legitimate interpretations: First, that invasion of surrounding viscera may be referred to sarcomatous transformation of an originally granulomatous lesion; or it is an expression of compulsory growth and thus locally malignant rather than malignant in the sense that the infiltrating cells possess automonous properties. Second, that the occurrence of secondary nodules may signify neoplastic conversion of the original growth and the transmission of autonomous qualities to cellular emobli deposited in distant parts, or that the transplanted provocative agent finds a suitable field of activity in the form of lymphomatous foci into being, the process throughout remaining within the bounds of an inflammatory lesion. But when such highly presumptive evidence of malignancy as destructive infiltration of neighboring tissues and the formation of secondary nodules in distant parts is combined with changes in the morphology of the growth indicated by the development of vast numbers of large round cells and of myeloid giant cells, neoplastic conversion would appear to be established beyond doubt.

Philippine Health.—Dr. V. G. Heiser, Director of Health in the Philippines, is in Philadelphia on a vacation; on his homeward passage he visited Australia for the purpose of perfecting quarantine arrangements between Australia and the Philippines, and also journeyed through the New Guinea and the Caroline Islands studying health conditions. All through these islands and many others of the South Seas the percentage of deaths has exceeded that of births among the native population for many years; such, however, is not now the case with the Philippines. The turning point was reached in 1910; and our island possessions are the only territory in that region in which the native population is not decreasing. The sanitary example of Havana has been emulated in the Philippines. "The natives are becoming our friends because we are curing their diseases." Thus has been great success in the treatment of beri-beri, from which scourge there were yearly from 5,000 to 7,000 deaths; this mortality is now greatly decreased through a discovery made jointly by Dr. Frazer in the Straits settlements and Dr. Aaron in the Philippines. Beriberi afflicts the Orientals because of their almost unvaried rice diet. "Polished rice" is presumed to be the causative factor; since those who eat unpolished rice or that which is not so thoroughly cleaned do not suffer the disease.

The Digestibility of Cheese is the title of a circular issued by the Department of Agriculture. The Swiss eat largely of cheese, this food with bread forming most of the dietary of many of that people who are unusually healthy. Germans consume large

quantities of the cheap but highly flavored skim-milk cheese, one popular variety of which is officially credited with "perhaps the most pungent odor of all the varieties of cheese made." The English miners are glad to get the poor cheese made in the United states. But we Americans, blind to our privileges, eat 170 pounds of meat per capita yearly, besides fish and poultry; and are content, each of us, with four pounds of cheese. Palatibility may partly account for our discrimination; but our government publication holds that the determining factor is mere custom and lack of knowledge. Besides its cheapness, all kinds of cheese, even the highly flavored and so-called condimental brands, have a very high food value; and as the supposed value of cheese as a stimulant to digestion was not known when it was consumed in small quantities, the last prop is removed from the adverse argument.

A Whole Nation Vaccinated.—Smallpox has been stamped out in Guatemala after a long epidemic, but only by the rigorous and unprecedented vaccination of every individual in the country. The whites have ever submitted voluntarily to vaccination; but the Indians, by reason of superstition, have heretofore always refused to be inoculated. Dr. J. A. Padilla, surgeon-general of the marine hospital and quarantine service of Guatemala, finding the epidemic beyond his control, made strong representations to President Cabrera of the necessity of immunizing the Indians, who were spreading the disease. The President then issued the order for general vaccination. Every physician in the republic was called on to assist, some thousands of dollars were invested in vaccine, and the soldiery concentrated the Indians. For three months the physicians worked daily. For the first time in its history (it is said) all Guatemalan ports are at present free of contagious diseases and passenger traffic is without restriction.

Anointing, states the British Medical Journal, is no inconsiderable part of the coronation service; it would be even more correct to describe it as more important than the crowning itself—more important, that is, from the inner and significant aspect of the ceremony. As part of the coronation ritual anointing was introduced into England in 871, when King Alfred came to the throne, and into Scotland in 1097, when King Edgar was crowned; it now forms the culminating point in the solemn spectacle enacted in Westminster Abbey when a new monarch comes to rule as King of the United Kingdom of Great Britain and Ireland, and of the British Dominions beyond the Seas. Anointing has a long history behind it, having probably originated in pre-theistic and even pre-fetish times.

Criminality Is Not a Natural Result of Illiteracy, since it does not follow that because a person knows how to read and write he is less apt to commit a crime. Such is the opinion of Signor Calojanni, a Sicilian investigator, who has sought to confute the axiom of the jurist Filangieri, that when a school is opened a prison is closed; the former points out that although in the last fifty years many schools have been opened in Italy not one prison has yet been closed—in fact the number of prisons has greatly increased and they are overcrowded. Mortara has analyzed the statistics of illiteracy and criminality during the last five years and shows that crime increases in those Italian provinces where the proportion of illiterates is greater. In fact, in Sicily, where only 201 in every 1,000 can write, the proportion of criminals amounts to 2,017 in 100,000 of population; whereas in Piedmont, where there are 177 illiterates in every 1,000, the proportion of criminals is only 849 in 100,000 inhabitants. Mortara admits that civilization causes the increase of such crimes as forgeries; but, on the whole, finds the advantages of education are undeniable and that illiteracy should not be encouraged.

The Suicide Increase in Russia is such that the medical faculty has been searching for remedies of what might well be termed an epidemic of self-destruction; the frequency of suicidal tendencies among school children is of especial concern to educators and physicians. 125 suicides among boys and girls of tender age were reported in three months. Professor Charkotinin found various causes for these suicides — resentment of fancied wrongs or slights, fear of punishment or of failure at school, derision by schoolfellows, unrequited love, and so forth. The age of these youthful suicides begins at 3½, at which life-period a boy hanged himself: this was surmised to be an accident; but Dr. Koraschke, who made a close investigation into the circumstances surrounding the affair, found it a genuinely premeditated suicide. In Germany the distribution of the Easter school certificates was marked by a series of schoolboy suicides; and on this circumstance the famous pedagogue, Dr. Ludwig Gurlitt, founds an apprehension that there is something radically wrong about the vaunted German educational system which causes this dreadful sacrifice of young lives, a state of affairs unapproached by any other European nation except Russia. Schoolboys seem to play with the suicide idea —an unhealthy symptom: At Osterode the Latin school students made a life-size dummy wearing a cap with the college colors, hung it on a tree in front of the school house, and nailed to this tree a letter to the effect that so and so "had hanged himself because he was not promoted this Easter."

Circulatory Disturbances of the Liver.—1. Active Hyperemia or Congestion occurs normally after meals, in acute infectious diseases and the like. The symptoms are absent or vague. 2. Passive Hyperemia, Chronic Congestion or Nutmeg Liver is due to circulatory obstruction by chronic valvular disease with failure of compensation; pulmonary obstruction in emphysema, chronic interstitial pneumonia, large pleuritic effusion; obstruction of inferior veva cava or hepatic vein by aneurism or tumor. The pathology: The organ is uniformly large, dark red and firm; cut section shows nutmeg appearance, due to deeply congested central vein and capillaries; in a later stage the liver is contracted, central liver cells are atrophied, connective tissue is increased. The symptoms: Sometimes a feeling of weight in the hepatic region; gastrointestinal disturbances; there may be hematemesis or jaundice, with clay-colored stools and dark urine; the liver is enlarged, tender, and it may pulsate; ascites is common. Treatment: of the cause; purgation, especially by salts. 3. Thrombosis of the portal vein may occur in cirrhosis, syphilis or cancer of the liver, sclerosis of the portal

vein, local inflammation from injury, proliferative peritonitis, external pressure by enlarged glands, tumors and so forth. The clot may become organized with complete obstruction of the portal vein, collateral circulation being established. The symptoms are slight, there may be sudden enlargement of spleen, with ascites and blood in vomitus and stools.

Medical School Inspection in England and Wales. Of the nearly 6,000,000 pupils in these countries who have been inspected, about ten per cent. are reported to be suffering seriously from defective hearing, one per cent. from tuberculosis and heart disease, eight per cent. from obstructions to proper breathing, and thirty per cent. from extensive and injurious dental decay. These figures would indicate a large degree of suffering and inefficiency. Perhaps the most important as well as the most easily preventable evil is the prevalence of disease of the teeth. It is now well established that defective mastication is a serious hindrance to adequate nutrition, and hence to the attainment of normal physical development. The difficulty is greatest in the towns, with their inseparable association of poverty with dirt.

North Carolina Medicine. — The Charlotte Medical Journal, July, 1911, proves a full issue. Glueck, of Washington, D. C., reviews paresis; Williams, of Greensboro, N. C., describes the methods of diagnosis of bone diseases, warning us against converting tuberculous conditions into open wounds. The editors explain lumbar puncture, which, in the leading article, was mentioned as so important for diagnosis. Beriberi is spoken of, editorially, and rice with the pericarp removed is mentioned as a possible etiologic agent. The administration of rice polishings seems to give relief in 48 cases noted out of 50, treated so at Culion. Aron shows that rice containing less than 0.4% of P_2O_5 is to be taken as polished. Authorities now can be quoted to place beri-beri in the category of nutritional diseases, and not quarantinable.

Fruits in the Diet.—This truly magistral essay by Marcel Labbe, in the *Paris médical,* 10 June 1911, opens with a study of the qualities and kinds of fruit, which are divided as: 1. aqueous acidulous; 2. sweet, either moist or dry; 3. oily, fatty or starchy. This, says Labbe, is the schema of Prof. A. Gautier, while in culinary art there are recognized four red fruits: the strawberry, the cherry, the red-curant, and raspberry; and four yellow, as, the orange, the lemon, Spanish or Seville orange, and citron or lime.

1. The aqueous acidulous fruits are many: plums, pears, grapes, apples, red-currants, lemons, limes, citrons, oranges, strawberries, melons (here the writer placed bananas, we would class the banana anywhere else).

This group is composed of proteid as albumin from 0.25 to 1.5 grams per 100. Fat about one per cent. of total weight. Water constitutes their bulk, and the sugar may amount to 25 per cent, as in grapes, while in citrons it is as low as 1 per cent.

The sort of sugar varies:

Fruit	Dextrose or Glucose	Levulose	Saccharose
Grape	x	x	0
Apples	x	x	0
Pears	x	x	0
Melon	0	0	x

Gums are present, and exercise a favorable action upon the respiratory mucosa. Dates, jujubes, figs and raisins are in the group of gum-bearing fruits.

The cellulose is indigestible.

Acids are found. Malic, citric and tartaric, united with potasium. This causes the sour taste of a fruit, and its diuretic action.

Minerals, such as potassium, act as tissue activators, heart stimulants and diuretics, while manganese acts as a fermentative accelerator, and is present in lemons, limes and grapes. Iron is found in strawberries, and in some grapes. Iodin exists in grapes, according to Gautier and Bourcet.

The dry and sugary fruits, such as dates, figs, prunes, and raisins, contain often 80 per cent. sugar.

The oleaginous fruits are: almonds, nuts, olives, chestnuts, walnuts, hazelnuts, and contain 16 to 24 per cent. albuminous matter and about 54 to 62 per cent of lipoids or fatty derivatives. They have about 15 per cent. carbohydrate elements. The chestnut contains 40 per cent. starch.

Fainting is due to cerebral anemia; it occurs mostly in weak, sensitive women, but sometimes also in men; it usually occurs in crowds or in crowded halls, theatres and churches where the atmosphere is close and the air foul. It lasts but a few minutes and recovery is generally immediate in the fresh air; in some cases, however, the faint may last an hour or more. The patient is to be laid flat on the back with the head lower than the feet; we may take an ordinary straight back chair, turn it over so that the back forms an angle with the floor and place the patient on the back of the chair with the head hanging down. All tight clothing about the neck and waist is loosened; aromatic spirits of ammonia; cold water sprinkled on face, chest and hands.

The Chinese Medical Practitioner, states the *Celestial Empire,* is all too frequently a medical Squeers. Having failed in everything else he takes to the cure of disease. All he needs is a book or two of prescriptions, a little skill in feeling the pulse and a pair of goggles. The drugs which the patient gets of the apothecary or finds for himself are simples of the nettle-tea sort, which cannot do much harm. At their worst they are like the medicinal terrors of childhood in which the efficiency of the dose is supposed to be in direct proportion to its repulsiveness. Yet, though lacking in the training of the schools, the Chinese doctor has behind him that which is praised even in the West—a long record of medical experience. A recently issued "Dictionary of Medicine," of 2,500 pages, indicates an amount of tested knowledge that merits respect. More convincing still is the statement on "the very highest authority in Hongkong" that the aid of competent native doctors in times of pestilence has been of the greatest benefit, the gradual conquest of such outbreaks in Southern China being largely due to them.

Luminous Bacteria.—Barnard, in *Knowledge,* includes careful directions as to how the light producing bacteria may be obtained and grown. These emit light that is produced entirely by themselves, independently of any extraneous light source; in fact, they grow and produce light better if kept entirely in the dark. Their efficiency as light-producers is extremely high, and were it possible to carry out on a commercial

scale the process of light production as it occurs in bacteria, a tremendous step forward would be taken. The natural habitat of these germs seems to be almost exclusively sea water—or at least such water as is found in estuaries where an appreciable quantity of saline matter is present. The most easily procured organism of this group is the Photobacterium Phosphorescens, which may be got from a dead herring or a mackerel.

The Typhus Bacillus.—Predjetchensky, states the *Medical Record,* describes an organism which he has succeeded in isolating from the blood of typhus patients. He is able to obtain pure cultures only by inoculating 200 cc. of bacilli with 2 to 5 cc. of blood drawn between the sixth and ninth days of the disease. This germ is a short, fairly thick bacillus with rounded ends, occurring singly or in chains. It was agglutinated by the serum of typhus patients in 1-10 dilution in 1 hour, and in 1-40 dilution in 4 hours, while controls with the serum of persons in health or suffering from other diseases showed no agglutination. Mice, dogs and guinea pigs inoculated with a pure culture developed a fever and died, and the bacillus was recovered from their organs. This organism was also cultivated from the sputum of typhus patients; its presence in this secretion may be the chief factor in the spread of the disease. This bacillus is, apparently, not unlike that which Ricketts and Walker found in stained blood smears, and which, in their opinion, belonged to the hemorrhagic septicemia group.

Diabetes Mellitus.—A. E. Austin (Bost. Med. and Surg. Jour., June 8, 1911) warns against too great a faith in gluten breads, which are exploited to contain a large protein content, without any definite statement regarding the amount of starch contained or the term "practically starch-free" is used. When the amount of protein is accurately stated certainly this should also be done regarding the starch; such breads could then be much more intelligently employed, for we could add the amount of carbohydrate thus ingested to that taken in other ways, so that a basis for our calculation of utilization could be had. Austin's experience with every diabetic bread but one ("and that not particularly palatable") is that even their restricted use causes an increased elimination of sugar when the utilization factor is 0; this can be determined either by the collection of the urine after 24 hours' fasting, or by comparing elimination with the intake. Three possibilities are always present: either the tolerance will remain stationary, or it will increase, or it may diminish. By complete removal of starch and sugar for a period during which the urine should be carefully watched for sugar and particularly for diacetic acid, we can soon determine in which direction the indications regarding tolerance point, and proceed accordingly. If the utilization is minus and the body cannot oxidize even the sugar that should theoretically be derived from proteid containing not more than 10 gm. of nitrogen daily, then tolerance has reached its lowest ebb, and restoration will most likely not take place. Such patients usually die from steadily increasing acidosis.

Vaccine Treatment of Typhoid.—J. G. Gallison (N. Y. Med. Rec., June 24, 1911) begins with a small dose of 25,000,000 and increases to 50,000,000 at intervals of two or three days. Prophylactic injections are given at ten days' intervals. Antibodies—bacteriolsins, opsonins and agglutinins—begin to develop on the fifth to the tenth day. There is an incubation period between the injection and the beginning of antibody formation; then the amount of these bodies rises for twenty to twenty-five days, after which it gradually falls during a period of one year. In typhoid there is a temperature rise until the bacillus may be demonstrated in the blood; then there is a period of even higher temperature and the midals become evident in smaller dilutions, followed by a gradual decline; this is comparable to the rise of antibodies in vaccination. Recovery from typhoid and the development of immunity are brought about by a similar mechanism. One should expect little effect from the vaccines in the first week or ten days; then the antibodies natural to the disease, with those resulting from injection combine to improve the symptoms. Among twenty cases reported there were three deaths and one relapse; the three failures all became septic in their temperature curves. The deaths were from femoral phlebitis, lobar pneumonia and meningococcus septicemia.

Blood Pressure in Mental Disorders.—S. G. Longworth (Brit. Med. Jour., June 10, 1911) finds that manical and melancholic states are not associated with any constant modification of the arterial blood pressure, or any marked departure in it from the normal. It is the same with other types of mental disorder except congenital states in which the pressure tends to be low. The pressure bears some relation to the bodily tone and increases with advancing age; and as melancholia is generally a disorder of more advanced years than mania it is only associated with higher manometric readings on this account. Sedative drugs have a slight influence in lowering blood-pressure.

Therapeutic Theatres are reported to be the latest phase of the nature cure in Germany. The theory is that acting and reciting are cures for mental and nervous diseases. An Austrian physician with the not unsuggestive name of Lack professes to have cured many persons by forcing them to act before audiences of their friends in the open air; this on the theory that acting takes the patients out of themselves and thus prevents their thinking of their own maladies. Throughout Austria theatrical organizations to produce plays in the open air are being founded; and during the present summer performances are being given near every large town.

Bromide Intolerance and Bromide Poisoning.—L. Casamajor (Jour. Nervous and Ment. Dis., June) warns that the toxicity of the bromine salts is oftentimes overlooked. They may excite delirious states. No weak or anemic patient should receive even small doses without a full realization of the danger; in such cases the use of the bromides as local sedatives is contraindicated. Thick-tongued speech, bromide breath and psychic dulness are the poison symptoms, upon the appearance of one or the other of which the drug should be discontinued and large doses of sodium chloride given to replace the bromide; this with vigorous elimination should prevent the drug intoxication.

Doctors' Offices in Berlin. — A correspondent of the *Medical Record* reports a warm discussion that has

been going on in Berlin medical circles regarding the practice among certain physicians of having two or more offices—a practice that has for a long time been opposed in the society meetings and publications without any definite result. The Society for the Prevention of Abuses in the Policlinics sent out a questionaire to Berlin practitioners and received 1380 answers; among the writers of which 713 were engaged in general practice, 491 in specialties and 176 in both general and special practice. Forty-seven per cent. of the general practitioners, 20 per cent of the specialists, and 42 per cent. of the "double" group were utterly opposed to the maintenance of two offices. Thirty per cent of all three groups considered it proper to maintain one office for his private patients whilst another may be maintained for "cash" practice. Four per cent. of the entire number believed there should be no restriction as to the number of offices: a small percentage indeed, for we cannot understand why any physician should not, if he chooses, maintain as many offices as he can afford, without any relation to the opinions of others on the subject.

Boxing in Germany and France. — Germany is reported to be deeply bitten with the boxing craze; the tourist hears in trains or trams or on the street continually excited talk about "boxen matches." "cleenches," and "ober-cuts." In the Berlin Tiergartenhof contests are held almost daily; and tough "talent" from our shores are doing their best to turn slow-footed Teutons into active fighters. Like reports come from Leipzig, Munich, Hamburg and other important centres. The German ever takes his sports seriously; and boxing is no exception to the rule. Profound treatises are appearing on the elementary principles of self-defense in their relation to the national character; one writer observes: "It is a symptom of noble self-reliance when a man prefers his fists to a sword or a pistol; the British Empire is founded on the black eyes of its enemies." Boxing, in any case, were indeed better than the face slashing sabre contests which have been the German custom, among students at least.

Paris, also, has made it fashionable to patronize boxing contests; special matches are organized for members of the Parisian "smart set." The neighborhood of the Cirque de Paris is on boxing nights actually encumbered by the vehicles of the wealthy and of "society." Here again, whatever may be said against boxing, this form of entertainment seems preferable to the innoccuous and ridiculous French duel.

Foreign Body Removed from Right Bronchus.— R. H. Johnston writes of a new and easier method of bronchoscopy. The greatest difficulty is to pass the tube between the vocal cords into the trachea; these once passed it requires no special skill to push the tube further down. Johnston's idea is to place the patient's head straight on the table and to pass the old Jackson laryngoscope down between the incision teeth; the epiglottis is pulled up and a clear view of the larynx obtained. It is not necessary to put a pillow under the head to secure flexion; a straight position of the head, held firmly by an assistant, makes direct laryngoscopy easy. After working for some time with the straight method, Johnson found it feasible to pass the bronchoscope in this position, thus eliminating the strain on the wrist and the force required to overcome the tense muscles in the extended position. His procedure is: To place the patient on the table in the normal straight position; a general anesthetic; the modified direct laryngoscope is passed straight down between the incision teeth; and when the epiglottis comes into view the spatula end of the instrument is hooked behind it. By means of slight pressure on the upper teeth the epiglottis and base of the tongue are pulled up and the larynx opened for inspection. A weak solution of cocain is now applied to the larynx through the tube to prevent reflexes. With the laryngoscope in position the bronchoscope is passed through it to the vocal cords. With the eye fixed on the end of the smaller tube, a slight twisting motion is used, which sends the bronchoscope between the cords. The breathing is now pronouncedly tubal. The laryngoscope is removed and the patient's head is gently lowered over the end of the table; the examination is then continued as in the extended position. The operator stands at the patient's left and uses the laryngoscope in the left hand; both direct laryngoscopy and bronchoscopy are easier because the muscles are relaxed.

"Kill Flies and Save Lives," is this season's contribution of the Fly-Fighting Committee of the American Civic Association; it is said that no "best seller" can rival this little publication in the number of copies issued. The first edition of 100,000 copies was quickly exhausted by the demands of health officers, women's clubs, school boards, civic improvement societies, boy scouts and the like, for ammunition with which to prosecute the present national "Swat-the-Fly" campaign. The circular advocates the use of sticky and poisoned fly paper and a variety of traps; and it gives the following directions for killing the fly that has escaped all the other deaths devised for him: "A cheap and reliable fly poison, which is not dangerous to human life, is bichromate of potash in solution. Dissolve one dram, which may be bought at any drug store, in two ounces of water; add a little sugar, and place about the house in shallow dishes. To clear rooms of flies use carbolic acid, heating a shovel and pouring on it 20 drops of the poison. The vapor will kill the flies. Another method: Burn pyrethrum powder in the room. The flies will fall to the floor stupefied and may be swept up and burned. The powder should be moistened and moulded into cones, and, after drying, each cone should be placed upon a dish and lighted at the top. It will burn slowly, and the odor is not disagreeable."

The Study of Dreams, states H. W. Frink (Med. Rec., May 27, 1911), enables one to penetrate hitherto unapproached regions of the mind. The day dream constitutes the fulfilment of a wish; in the night dream the wish or latent thought does not clearly appear; it is presented in a condensed or distorted form. An idea unpleasant for some reason is repressed, pushed back in the consciousness, and remains there until it is brought out by the dreaming mind. The wishes that receive imaginary fulfilment in dreams are repressed wishes. They are wishes that are unfulfilled during the day by accident; that are rejected on account of moral reasons, or conscious wishes of childhood that were repressed; many of these are connected with the sex impulse. The dream is a compromise between two opposite psychic forces: the repressing force and the repressed stream which seeks

fulfillment. The conversion of the latent into the manifest content of dreams is carried out in one of several ways: by condensation; by displacement by dramatization; by elaboration. The function of the dream is as a promotor of sleep; it stills and satisfies repressed wishes without annoyance to the sleeper. The analysis of dreams is a procedure that will bring one to the inmost recesses of the patient's mind. Dream analysis is an enormous aid in therapeutics. When the latent wish is found, and a discharge to the emotivity is secured, the symptoms disappear.

The Tuberculosis Report.—The final report of the British Royal Commission on Tuberculosis, which was formed a decade ago to investigate the observation of Robert Koch regarding the relationship of the human and bovine types, is now published.

The first issue before the commission was whether tuberculosis is one and the same described in man and cattle. The answer, after these years of study by England's best bacteriologists and pathologists, is practically in the affirmative, and in refutation of the great German's opinion. There are differences in character between the human and the bovine tubercle bacillus; but the bovine bacillus can fatally infect human beings. Wherefore, from the viewpoint of public health, the two diseases must be regarded as identical.

The second point at issue was whether animals and men could be reciprocally infected with the disease; the answer is here also in the affirmative, emphatically and without qualification; and such reciprocal cases of infection have been fatal.

Draughts and Common Sense. — The British Medical Journal observes that a draught is in reality a concentrated dose of fresh air. Lead, when distributed through the substance of india rubber gloves, is as useful to X-ray workers as is fresh air to ordinary individuals; but when concentrated in the form of a bullet, exposure to its impact is at least inconvenient. In like manner draughts are sometimes dangerous to those unaccustomed to them. "It is not commonly understood that draughts are merely the primum movens, the immediate cause of the ill results experienced being in some cases perhaps a toxin, with which the system would have been able to deal effectively but for the local depression of vitality brought about by exposure to a concentrated dose of fresh air."

Lobar Pneumonia.—T. F. Reilly (Med. Rec., May 20, 1911) finds the prognosis to depend on the character of the soil and the virulence of the infection. In addition there is the consideration that a vital organ is involved. In the epidemic form the infection is very virulent. Pneumonia contracted from another person is highly fatal; and when it is contracted by many persons simultaneously (as in a barracks or school) the mortality averages as high as 75 per cent. The earlier in such an epidemic a given case occurs, the worse the prognosis. But apart from epidemics the most important factor in prognosis is the character of the soil, the age, habits, family history, the condition of the heart and kidneys. The best guide is the circulation and the heart; any change in the pulse except a slowing is a danger signal; arrhythmia is especially serious. The character of the pulmonary second sound indicates the patient's condition.

Constipation and Surgery.—J. S. Clark (Therap. Gaz., May, 1911) considers what cases are amenable to operation and finds: Developmental anomalies are at the bottom of many cases of chronic constipation. Posture is frequently a result rather than a cause of this ptosis. Congenital potential factors are present in many individuals; such factors become active through accident (as trauma), rapid and badly cared for childbirth, habitual constipation, operative adhesions and the like. Neurasthenia often dates from childhood or puberty; thus may operation in the adult give only slight relief by reason of this constitutional weakness. Cases in which there is a recent accession of the active factor give the best surgical results. Various suspension operations are valuable in properly selected cases, but disappointing in the remainder: at best these fixation points may be unstable. Radical excision of obstructive portions of the large bowel give the highest operative mortality, but the best ultimate result in the survivors. In no other field of surgery should *festina lente* apply more than here; this is no field for the novice. The most important factor in the diagnosis is a detailed clinical history pointing accurately to obstructive possibilities; skiagraphy is of the greatest value.

The Sensibility of the Alimentary Canal in Health and Disease.—A. F. Hertz (Lancet, May 6, 1911) finds that hunger consists in a general sensation of malaise and weakness, and a local sense of emptiness in the abdomen; the latter is due to the periodic motor activity of the stomach and intestines during fasting, when the sensory nerves are in a condition of hyperexcitability. The only immediate cause of true visceral disease is tension, which is exerted on the muscular coats of hollow organs and on the fibrous capsules of solid organs. Pain in the digestive tract is due to a more rapid or a greater increase in tension on the fibres of its muscular coat than that which constitutes the adequate stimulus for the sensation of fulness; such is most frequently true visceral pain, being sometimes due to the spread of the disease to surrounding sensitive structures, or to tension exerted on the peritoneal connections. Pain may moreover be situated in the skin, muscles and connective tissue, to which it is referred from the segment of the central nervous system, which receives the different nerves from the affected organ.

Pain may also be due to increase in tension within the organ produced by the external pressure giving rise to the adequate stimulus of visceral pain; this is rare in the stomach, but comparatively common in spasmodic conditions of the colon and in appendicitis. Finally pain may be due to the spread of the disease to the parietal peritoneum. Visceral sensibility is exaggerated by training in hypochondriasis; and visceral and referred sensations are exaggerated by the irritable condition of the central nervous system in anemia and neurasthenia.

Memminger's Notions of the Import of Urinalysis.—Upon the amount of solids, relative and absolute compared, depends the meaning of the twenty-four hours' urine. Allard Memminger gives ratios and formulas for the estimation of solid matter in urine. He discounts tube-casts, to a measure. At times such detritus may be normal, or within normal variation. He admits that this view is not that commonly accepted

In a fine monograph (Blakiston) he shows his method of reasoning. Cases are quoted. Tyson and Hastings—urologists in general—would probably adhere to the unfavorable signification of the presence of tube-casts. Memminger considers waste of the epithelium natural, at an advanced age, or in certain acute diseases. After these ailments the kidney seems restored, therefore, etc.

A Possible Bathing Resort.—The World's Work states that the Dead Sea contains 28 per cent. of solid matter, and is, bulk for bulk, heavier than the human body. Many believe it is impossible to swim in this sea; and even in Jerusalem ridiculous fables are told as to the impossibility of bathing there, and that no animals or vegetation can exist near its shores. So far as swimming is concerned the excessive buoyancy of the water simply renders it difficult to make much headway; but a swim is most feasible and enjoyable. Care must be taken, however, not to let the water get into the eyes. Indeed, did Palestine belong to any Power but Turkey, the northern shore of the Dead Sea would probably become a popular bathing station. No doubt the chloride of magnesia which enters so largely into the composition of the water would be found to have both medicinal and curative properties. Perhaps a better idea of the density of the water of this inland sea may be realized from the following statistics: In a ton of water from the Caspian sea there are eleven pounds of salt; in the Baltic eighteen pounds; in the Black Sea twenty-six pounds; in the Atlantic thirty-one pounds; in the English Channel seventy-two pounds; in the Mediteranean eighty-five pounds; in the Red Sea ninety-three pounds; in the Dead Sea one hundred and eighty-seven pounds.

Appendicular Dyspepsia is defined by R. C. B. Maunsell (Brit. Med. Jour., May 6, 1911) as a group of symptoms which point so strongly to organic, gastric or duodenal disease that only by most careful examination or by the supervention of definite appendicular symptoms that a correct diagnosis is possible. One must exclude other causes of reflex pain and vomiting, especially causes arising from the pelvic organs, kidneys and gall bladder; the latter (with bile-duct manifestations) are the most difficult to guard against.

An Irregular Pulse may have an important bearing in disease; during an attack of pneumonia it may be the first sign of a fatal termination. An irregular pulse may be a family peculiarity. A pulse may appear quite regular to the palpating finger; but the heart may be grossly irregular—as in certain cases of heart block. The factors which govern the normal heart beat are stimulus formation, excitability, contractility, conductivity and tonicity. In a normal heart these five properties of heart muscle fibres are interdependent; but in pathological conditions they may be affected independently of one another.

The Doctor's Degree.—The conferring on the Kaiser of an honorary doctor's degree by Berlin University recalls the fact that the title has fallen from the high estate it enjoyed in other times. In the universities of the twelfth century, at Bologna, Paris and Orleans (which were the forerunners of the German universities) the doctor, whether of law, science or theology, had rank, consideration and privileges that are not now conceded him. In the Middle Ages the doctor was on a footing with the knight and took precedence of the local aristocracy, though lacking the title of nobility. He always wore his hood and gown, and was "maxime reverendus, nobilissimus, experientissimus," etc., etc. He paid no taxes! He could not be troubled with the quartermaster and he had the privilege of having his testimony taken in his own house. During the examination for his degree he was treated with wine and food; and after the degree was conferred the event was celebrated by a long drawn out banquet. Gradually the nimbus around the doctor's head faded; and at the time of the Reformation Luther, himself a doctor, complained of the change that had taken place.

Obligatory Anti-Typhoid Inoculations.—The entire army of the United States, officers and men alike, 76,000 in all, are to be inoculated against typhoid fever—that is, all under 45 years of age. Heretofore it has been voluntary for an army man, whether he would be vaccinated against typhoid; and on that basis 17,000 inoculations have been made. But now all must submit; as did recently, by way of example, Secretary of War Stimson.

Malaria Prophylaxis.—How effective are modern methods is shown by the fact that in Italy the malaria rate has been greatly reduced from the previous 65 or 70 per cent. Along the Italian railroads the thorough screening of all habitations and the wearing of veils and gloves when outdoors after sundown led to a reduction to 14 per cent.; but there it held. It was by the systematic use of quinine that the further percentage to 4 per cent. was effected. Quinine is distributed free to all laborers and to the poor in malarious districts; it is prepared with chocolate and other confectionery, which even children are easily induced to take. Dr. L. O. Howard of the Bureau of Entomology observes that whereas in most parts of the world where anti-mosquito measures have been undertaken on a large scale, the work has been done with the direct end of doing away with mosquito-borne disease, in the United States the work is almost always done simply to rid the community of a grave nuisance. There yet remain, however, many malarial regions (including "the richest in the whole world"—the lands of the Mississippi Delta) which cannot be properly utilized so long as mosquitoes are allowed to prevail.

A Good Corset, observes S. B. Somers (J. A. M. A., May 20, 1911) is laced about the hips and holds its place independently of garters or straps, it supports the lower abdomen and reduces the hips; it has a straight front; it is only form-fitting or loose about the waist and bust; it does not diminish the waist measure; it laces from below by means of two or more lace strings. A bad corset exercises its greatest compression about the waist and diminishes its measure from two to four inches; it is loose about the hips and held down by garters or by the tight lacing above.

Appendicitis should be operated for immediately the diagnosis is made, declares H. J. Paterson (Lancet, May 13, 1911), who reports eight cases, in none of which the patient appeared to be seriously ill. In two of these cases there was general peritonitis, and in all the appendix was gangrenous or perforated.

MISCELLANY

Cacodylate of Sodium.—This is best given hypodermically. Abscesses do not occur with any ordinarily sufficient technique. Neurasthenia is an indication.

Arsenite of Iron.—Pyrophosphate salts of iron have been used. The arsenite is recommended in cases of chorea, chlorosis, etc.

Gelatin.—In gastro-enteric hemorrhages the administration of gelatin, in thin semi-solid form, is advised. Severe typhoid hemorrhages have been excellently so controlled.

Surgery Earlier in Acute Ulcer Peritonitis.—Forbes Hawkes, in the May issue Annals of Surgery advises earlier recognition of abdominal rigidity, and the presence of perforation. A special typhoid night-watch in hospitals may be required to bring the cases quickly to the table.

Duodenal Ulcer—Deaver's View.—It is becoming possible to recognize this condition and operate earlier. Some writers say that Deaver will make as striking a picture of the needs of such cases as he has in those of appendiceal abscess.

Hay Fever.—Solomon Solis-Cohen of Philadelphia advises that very minute tablets be used upon the tongue to convey the medicament for this disease. He uses suprarenalin so prepared, and finds 1/40 grain sufficient until a degree of habituation is acquired.

Solis-Cohen recommended pituitary extract, preferably the extract of the infundibulum of the posterior lobe.

Pyorrhea Alveolaris.—This painful condition may lead to gingival suppuration. Injection of absolute alcohol (or 95 per cent.) may give instant relief from the almost unendurable aching.

Lysol injected transversely through the gums in the direction of the root of the tooth as it emerges from the alfeolar socket may act magically, and causes the pyogenic material to be put in check.

Renal Tuberculosis.—Marion in the Progres Medical, 15 July 1911, goes into the "conduct of the physician toward a patient suspected of renal tuberculosis." He asserts the absolute surgical indication, and says that medicinal treatment is of no avail. We admit that. There are cases on record, chiefly of surgical cases in which post-operative use of tuberculin has proven of extreme value.

Scarlet-Red in Treatment of Aseptic Ulcers.—The Therapeutic Gazette, 15 June, 1911, recommends this treatment. From other sources, notably students in Germany, and in Johns Hopkins, we are receiving favorable comment. The chemic formula is that of a sodium salt derivative of disulphonic acid, discovered in 1882, and receiving favorable reports in 1906. An 8 per cent. ointment is employed.

An Unbearable Swindle.—A Munich statistician estimates that Germans were in 1910 swindled out of twelve and a half million dollars' worth of beer through getting short measure: this sad condition seems to have been going on undiscovered for years past. There is now a prodigious ferment of excitement; "no German in his life," declared one outraged citizen of the Fatherland, "has ever drunk an honest measure of beer."

A Suggestion.—It would seem there are very few physicians indeed among the myriads occupying the great buildings in the lower part of Manhattan Borough; a look through the classified telephone directory would show that of the several thousand physicians and surgeons having telephones, hardly any were in the district covered by Rector, Broad, Cortland and John. Yet there should be good practice in those parts of town; with little disturbance of one's rest at night.

To Disinfect the Streets.—Poughkeepsie, New York, has planned to disinfect the water used to sprinkle the streets by adding a chloride mixture which it is supposed will destroy many pathogenic bacteria, especially those of tuberculosis and of the exanthemata.

Are Poliomyelitis and Herpes Zoster the Same Pathological Entity? asks R. P. Garrow as reported by the British Medical Journal. There is a remarkable analogy between these affections, in that they were simultaneously epidemic in a certain district; may they not therefore depend on the same infective process, attacking the spinal anterior horns in the one case and the posterior horns in the other?

Accident Days.—Statistics into the causes of accidents among industrial workers, gathered for a number of years in Germany, show that the greatest number of casualties occur on Saturday, whilst Monday is a close second. The large number of accidents on Saturdays is generally explained by the fatigue of the week; but it is noted also that the Monday accidents are about as numerous—possibly by reason that the day of rest is not too wisely spent.

Open Windows. — The Metropolitan Health Department has found the prevalence of contagious diseases at its heighth during the early months of the year; a marked decrease in these maladies occurs annually in the spring at about the time windows are opened that have rarely been opened in the winter, and where a close and overheated atmosphere has prevailed during the cold season.

Pasteur's Birthplace at Dôle has become a place of pilgrimage for the people in the neighboring departments, who go to contemplate the modest dwelling where, on December 27, 1822, one of the very greatest scientists of modern times was born. The Municipal Council has purchased the house, for which, up to the end of his life, Pasteur ever showed the greatest affection, and which he every year visited.

The Vasomotor System in Tabes.—H. Matthews (Brit. Med. Jour., May 13, 1911) finds that, in addition to impairment of the cerebrospinal reflexes there are perversions of function, which manifest themselves in edema of the extremities, extravasations of blood, vasoconstriction (as evidenced by anemia), coldness of the extremities and other peripheral disturbances.

The Adrenals regulate and inhibit the pigment metabolism of the skin, states Meirowsky (Muench. Mediz. Woch., May 9, 1911); they work upon such albuminous cleavage products of the epidermis, as tyrosin and its derivatives. Should this process be disturbed through functional or structural disease of the adrenals the cleavage products of the epidermis are transformed by oxydases into pigment before they can be absorbed into the circulation. Thus is explained the pigmentation of Addison's Disease.

HOW TRAUMATISMS CAUSE CANCEROUS GROWTHS.

By Louis Bradford Couch, M.D., Nyack, N. Y.

IT is fast becoming a conviction among medical men that cancer in the great majority of cases is the direct result of traumatic action. One of the latest American authors,* who has done some excellent work with radium in cases of inoperable abdominal cancers, declares, after careful investigation, that traumatism has been the cause in 90 per cent. of his cases. Many other observers have made similar declarations, recognizing in trauma the most potent cause of this most dreaded of all diseases. No investigator, however, has up to this time discovered why and in what manner the cancer cell is produced, and so the real causative factor of these strange growths remains to-day as it has been throughout the ages, an impenetrable mystery.

The phenomena of inflammation is not well understood. Ziegler says:† "No Pathologist of to-day defines inflammation the same way as any other." Henle, Stilling and Rockitansky attributed the dilation of vessels and a slowing of the blood stream to a paralysis of the vessel nerves; while according to Henle and Rockitansky the cause is an increased excitement of the sensory nerves, while according to Stilling, the cause is a paralysis of these nerves induced by an "inflammatory irritant." Rockitansky sought to explain the pouring out of exudates from inflamed blood vessels to a dilation, a thinning and increased permeability of the vascular walls. Stilling, however, who declares that inflammation is induced by an "inflammatory irritant," did not identify it, give it a name, show its chemistry, give a reason for its presence there, or tell how and in what manner it causes inflammatory action. In other words, he groups symptoms and studies the changing pictures of inflammation, and then speculates as all the other pathologists do, as to the causative factor that produces the inflammatory phenomena. No investigator, so far as I know, has discovered the real factor that coagulates human blood or its serum exudates forced through the coats of distended inflamed blood vessels. In the absence of these important essentials no one, it seems to me, can thoroughly comprehend what inflammation really means, or understand or explain the laws that govern its phenomena, more especially the production of its coagulated end products—catarrhal mucus, croupus, tonsillar and diphtherial membranes, tubercules, nephritic tube casts, and, last but not least, that interesting product of suppurative inflammation—pus.

For fifteen years I have been studying all the so-called "kinds" of inflammation, and my quest for the unknown causative factor of cancerous growths has, thanks to an accidental discovery, proved successful, and I am happy in being able to show therefore all the missing links in the inflammatory pathological chain. I have found what Stilling's "inflammatory irritant" really is; can tell how it is produced in traumatized tissues; can give its chemistry; can prove that it causes an intense neuritis, which, however, is instantly cured by removing the irritant cause from the tissues by new and original methods; can reproduce this neuritis in all its intensity by injecting this poison back into the tissues, while all the pains cease again the instant it is removed; have proved that this irritant poison *is the cause of all inflammatory pains, neuralgic, rheumatic, pleuritic, peritoneal,* etc.; can show that this poison not only irritates blood vessels, but paralyzses their muscular coats, thus precipitating inflammatory action, which is followed by dilation, distention, stasis, and blood serum exudation; have shown that it unites with another hæmic element by special affinity, forming an acid which coagulates blood as well as its serum exudates forced through the coats of distended blood vessels. This acid element is without doubt the cause of emboli and thrombi, the etiology of which has never been satisfactorily explained. All these new and original facts will open up interesting fields of scientific research of great value to humanity. Based upon this information I have demonstrated that cancer is a *product of fermentation* in tissues, and is curable even when recurring after operation. It must be obvious then to the reader that to cover all these etiological and interesting facts and make the causation of cancer plain, clear and convincing, we must study the subject from every possible viewpoint.

It appears that certain well known laws of physics have not been seriously considered in explaining the phenomena of inflammation. All pathologists agree that any factor that irritates, dilates or paralyzes blood vessels stagnates blood and precipitates inflammation, and the reasons therefore are easily explained. There is a well established law that doubling the diameter of a given tube doubles the internal surfaces as well as the strain, thins the wall 50% and quadruples the capacity. On applying the same laws to flexible vessels, conditions are changed as permeability of dilated vascular

*W. H. Diefenbach, Medical Record, Dec. 8, 1906.
†Ziegler General Pathology, p. 264.

* Widely distributed through the organized world and intimately associated with all the phenomena of life are living entities, known as organized and unorganized ferments (enzymes). Ferments cannot be detected by the microscope or by chemical reactions, and are only known by their effects, which have been carefully studied by scientists. Ferments have been found by Krukenburgh and his pupils in the lower animals, and in fishes, in amphibia (Fick). They have been found in the liver, kidneys, spleen, in the blood, in urine, sweat, in fact in every organ and tissue of the body as well as all the tissue juices, in the sputum of those suffering from lung diseases (Filehne), in exudations (Eichorst) and in the fluid of cysts (Jasch). It is the rotting enzymes that decompose sewerage filth, changing them into their original gaseous elements so that enzymes, sewer gases and pathogenic germs exist together in common solution and neither the toxic gases evolved or the rotting enzymes have ever been separated from germs in the cultivation of "pure cultures" of Kochs or Klebs-Loeffler bacilli, at least to my knowledge. As I have demonstrated that these toxic gases paralyze the muscularity of blood vessels, thus precipitating inflammatory action as well as continuing it when caused by other factors, the declaration that the *germs* cause inflammatory phenomena *per se* is, to say the least, as yet unproved. As these ferment gases form an acid with water of blood and tissues which have a coagulative action on blood serum exudates, and as no one has shown how pathogenic germs cause such action the etiology of tubercles and diphtherial membranes is in doubt also. After a good deal of study and thought the writer's present opinion is, that all contagious diseases such as scarlet fever, diphtheria, smallpox, measles, chicken pox, yellow fever, typhoid fever, the plague, infantile paralysis, cholera, etc., are each and all the products of *specific enzymes* each producing its own phenomena and no other; that all the serum experiments at present in vogue are really actions of modified ferments, rendered practically innocuous by filtering them through the blood and tissues of unsusceptible animals such as cows, horses, etc., while on the other hand the same ferments become more and more vicious as they are passed through the blood of animals susceptible thereto.

walls which determine the amount of inflammatory exudates has to be considered. Any increase of vascular surfaces increases the amount of exudates in like degree. Exudates also increase in proportion to thinning and consequent permeability of a vessel's walls. It must be plain therefore that doubling by dilation the diameter of a vessel makes its walls 50% thinner and more permeable, doubles the internal surfaces, doubles the strain and quadruples the capacity as well as the amount of the exudates forced through the coats of the expanded vessel. It seems therefore that all the phenomena of inflammatory action are the results of natural physical laws and easy of comprehension. Thus a vessel dilated to twice its normal diameter has four times its former capacity and possessing but a fraction of its normal power to contract and expel its contents, and receiving with every pulsation blood from a vessel of normal strength, naturally dilates to the limit allowed by the surrounding or containing environment; hence stagnation, distention, blood serum exudation, pain, local heat, swelling, in fact, all the well-recognized symptoms of inflammation follow as natural mechanical consequences. It would seem but natural and reasonable that the same symptoms and conditions of vascular phenomena must exist in all kinds of inflammations no matter how labelled or designated since all are products of the same mechanical and hydrostatic laws. If, therefore, the phenomena surrounding inflammatory actions are always the same, and the vascular exudates occurring in all the various kinds of inflammations, catarrhal, croupous, tonsillar, diphthereal, tubercular, suppurative, are all composed of plain blood serum, coagulated by one common chemical factor, it will be difficult to show that pathogenic germs which possess no coagulating action whatever on the blood serum, play any part either in precipitating inflammation or in the production of its end products. It is well to remember in this connection that pathogenic germs do not grow and multiply in healthy tissues as Pasteur showed many years ago.

Go into the woods and you will observe rotting leaves in clear pools fringed along their edges with rows of clear glistening gas globules. This disintegrating process is produced by what is known as the "rotting enzymes." These fermenting principles possess a dual action. They first liquidize these dead vegetable products and then complete their functions by changing these products into their original basic elements, out of which Dame Nature originally constructed them. Oxygen, carbon, hydrogen, and nitrogen. These principles once evolved, released or dissociated, at once recombine according to their individual affinities, carbon with oxygen forming Co2, which at once unites with water, forming carbonic acid. Precisely the same phenomena occurs in the human economy by the action of digestive ferments on various food products. Physiologists tell us that twelve pints of these digestive liquids are poured out into the intestinal canal every 24 hours, and after performing their functions, are reabsorbed again into the circulation.

Within the mouth are three seats of glands which secrete ferments which liquidize and convert starch substances into sugar by means of an active principle—diastase! This carbo-hydrate digestion is normally completed in 45 minutes and is designated as the alkaline period of digestion. At frequent intervals the stomach contracts and these ferments and the liquidized food products in common solution are forced into the intestine and are absorbed into the blood plasma. These intestinal absorbents possess no power of selection or rejection of poisons or liquidized food products with which they are brought in contact. Every drop of blood therefore contains its carbo-hydrate element as well as its decomposing ferment, which acting continuously, furnishes the blood with vitally important gases without which blood circulation would be an impossibility. The importance of these blood gases cannot be overestimated. They impart an elastic compressible quality to the circulating medium that lessens materially the strain upon the heart during ventricular contraction. Were that organ obliged to contract upon a non-gaseous liquid like pure water, which is as incompressible as steel, it would soon develop structural lesions that would rapidly increase and quickly lead to fatal results. Nature overcomes these dangers by the continuous evolvement of gaseous elements. Oxygen thus continuously produced in every drop of blood throughout the body, independent of lung action, is, without doubt, a life-saving factor in many cases of sudden syncope, when the respiratory functions are temporarily suspended.

While carbon di-oxide gas and its acid element, formed by its union with the water of the blood, are absolutely indispensable elements of blood circulation, they become very dangerous to the life of the individual when they accumulate in the blood and tissues through failure of the skin, lungs, gastro-intestinal mucus membrane and kidneys to eliminate them beyond the normal circulatory requirements of the system, causing as they do by their intensely irritating action, a dilation as well as a paralysis of blood vessels, thus precipitating as well as continuing indefinitely, all the familiar phenomena of inflammatory action. Not only this, but carbonic acid possesses a chemical action on albuminous substances of great interest and importance. It coagulates and turns white all the blood serum exudates, now erroneously ascribed to various pathogenic germs, as we shall show later on.

Felner's experiments illustrating the action of carbonic acid gas baths on the skin, and its paralyzing action on the muscularity of its blood vessels, are of particular interest at this time.

"What are the manifestations taking place in the carbonic acid baths? Having entered the bath, a prickling sensation and a peculiar feeling of warmth are noticed. It rises to the height of the gas in the cabinet. It gradually becomes more intense imparting a sensation of heat about the perineum and gentials. There is also a visible effect, the skin becoming *hyperemic and turgescent where the gas has come in contact with it. Haemorrhoids also undergo a swelling and possibly there may be some bleeding.* Hugo Winternitz says: "There has been some controversy as to the nature of the irritation which carbonic acid exercises upon the skin." The opinion was entertained that it exercises a chemical action upon the cutaneous nerves."

Thomas E. Saterwait says:

"Carbonic acid is absorbed by the skin and has a reflex action on the vaso-motor centers, followed by a dilation of the arteries and capillaries and redness of the skin." All the evidence thus far produced shows

*(A. Rose. Carbonic acid in medicine.) P. 179.

that the blood vessels become dilated, turgescent and paralyzed by this gas and this is all we care to know, as it completely corroborates my own investigations, which show that alone and unaided it not only causes vascular paralysis, thus precipitating genuine inflammatory action, but continues indefinitely other inflammatory processes, when allowed to accumulate in stagnated blood and tissues. With this knowledge in view we can readily explain the effects of Co2 retention in tissues after undue exposure of the skin to cold. Wet the hair and expose the uncovered head to a cold draught of air, and you begin to sneeze at once, and the nose begins to run. What is the rationale of this phenomena? You have chilled the skin and driven its blood to internal tissues thereby suppressing its Co2 exhaling function. This toxic gas being retained in the tissues, poisons the nasal circulation. Its vessels dilate and become turgescent, and under the resulting increased pressure, blood serum is forced through the attenuated coats of these vessels like water through a sieve, and an acute coryza is the result. In a few hours these watery discharges become thicker, turn white and become coagulated into what we call "catarrhal mucus" by carbonic acid locally generated in the stagnated blood and tissues.

Immerse any kind of the soft animal tissues in carbonated water and it turns white, and its albumen becomes coagulated at once.

Blood serum or the white of an egg similarly treated produces the same result. Open a felon, for instance, in the center of the hand or a traumatized arm effected by cellulitis, and the internal tissues will be found as white as the driven snow. The same factor—carbonic acid—has coagulated the inflammatory exudates into pus and blanched the tissues at the same time. The idea that pus is the product of the so-called pus coccus is a pathological dream. There is bound to be an awakening soon, and we shall all come to know that the so-called "pathologenic germs" are products of *pre-existing inflammatory processes,* and not as many now suppose, causative factors of the same; that croupous, tonsillar and diphtheritic membranes, nephritic tube casts and tubercules, are each and all just so many forms of blood serum exudates, turned white and coagulated by carbonic acid, and can be produced artificially if desired.

Apply an irritant, such as mustard, to the skin. Its vessels at once dilate and become turgescent; blood serum exudates follow, and a blister forms, the contents of which are as clear as the purest water. In a few hours, however, they turn white and become coagulated, and the coagulating factor is carbonic acid locally generated, as in the other cases.

Expose the naked shoulder to a cold draught of air and deltoid rheumatism begins at once. The next morning you cannot put the hand upon the head or shoulder because the deltoid muscle is paralyzed. Prick the skin of the affected parts and black blood oozes from every puncture, blood devoid of oxygen and saturated with carbonic acid, the containing vessels of which are paralyzed by the toxic gases of fermentation evolved in the stagnated blood held within. Expose the skin of the lumbar region and lumbago is the result with all the phenomena witnessed after shoulder exposures. All mucous membranes are highly vascular, and, like the skin, are exhalers of the gases of fermentation or combustion. Both tunics are also absorbers of oxygen as well as Co_2 and other gases; in other words, they are respiratory organs of great value in the human economy. In acute indigestion toxic fermentive gases are forced back into the blood and paralysis of the heart and the cerebral vessels results. Vessels once dilated and weakened cannot recover their contractility unaided, because toxic gases are constantly evolved within them which keep up the paralytic condition indefinitely. Vomiting or getting rid of the fermenting food and gases, however, soon restores the victim to consciousness, as I have often demonstrated, and the accompanying paralysis disappears at the same time.

A weak heart and abdominal distention with fermentive gases are the characteristic symptoms ushering in peritonitis, and the tortuous vessels and the coagulated shreds of fibrinous exudates tell their plain story of vascular paralysis and chemical action of carbonic acid. So much for the paralytic action of ferment gases on striated as well as unstriated muscular fibres.

Now let us consider the effects of traumatisms on the muscularity of blood vessels, paralyzing them, causing stagnation of their contents, thus precipitating what is known as traumatic inflammation and poisoning of the inflamed tissues with toxic gases of fermentation.

Some years ago I fell heavily, striking my great trochanter upon a hard, heavy, unyielding boathouse float. The pain following the injury was intense, and was accompanied by profound traumatic shock, weak heart, faintness and cold sweat on the face and forehead. Stimulants were given me to strengthen the heart action and lessen the severity of the shock. The next morning the skin of the whole thigh, even to a point below the knee, was as black as my hat and exquisitely sensitive to the slightest touch, which caused severe sharp shooting hot needle-like pains. The whole ecchymosed area was in fact in a state of acute traumatic neuritis. The case was both painful and intensely interesting to me. Why, thought I, is this extensive ecchymosis and severe neuritis, so far away from the point of injury? I considered these clinical symptoms worth my best thought and most careful study. My theory was that the severe traumatic shock had caused a vaso-motor paresis of all the cutaneous vessels of the whole ecchymosed area; that the paralyzed vessels being unable to contract and renew their circulation, had resulted in a complete stagnation of blood; that all its available oxygen had united with carbon, forming Co_2, thereby exhausting the oxygen and turning the tissues black; that the Co_2 had joined the water for which it has a great affinity, thereby forming carbonic acid; that this acid element was the irritating cause of the traumatic neuritis. I resolved to test these theories in an original way. I have a Lawler filter pump in my office attached to my cold water basin cock, our pressure being 45 pounds to the square inch. By means of this device I cure deltoid and lumbar rheumatisms, cause the absorption of fibrous tumors, remove effusions or pus from tissues or from serious cavities, prevent the formation of pus in cases of threatening abscesses—a la Bier—relieve the pains of neuritis, etc., etc. By means of this inexpensive device I can produce 28/30 of a perfect vacuum in a single moment of time. In the distal end of an 8-foot length of pressure tubing, I inserted a small glass funnel. Filling this funnel with water, I placed it on the blackened thigh, and turned on the water, which started the pump, my object being to decompose the carbonic acid by removing its

gaseous element, feeling sure that the tissues would not only be quickly restored to their normal color, but that the neuritis would disappear at the same time. I turned on the water and watched with great interest the effect on the tissues as the vacuum increased. As the gauge pointer passed the 22 mark, hundreds of small sparkling gas globules appeared at minute openings on the skin. As the vacuum increased, capillary attraction was overcome and the gas globules grew larger in size and becoming detached shot rapidly up through the water in a perfectly remarkable ebullition. This gradually decreased, however, and in about three minutes ceased entirely. I then removed the funnel. The tissues cupped were *white again, and to the touch were perfectly normal.* In that brief period all the neuritic pains and hypersensitiveness to touch in the now whitened area had completely disappeared. This information thus obtained was very valuable and interesting, but not conclusive. I wanted to prove beyond the shadow of a doubt that the carbonic acid element was the sole cause of the neuritis, so I injected hypodermically into the same parts 10 drops of carbonic acid from a nearby syphon. All the intense pains returned instantly. Frantic with pain, I reapplied the funnel to the parts I had just injected and started the pump again. The sharp, shooting, hot, needle-like pains were gone in a moment. By this simple experiment I had demonstrated for the first time in the history of medicine that shock of traumatism causes a paralysis of blood vessels far distant from the point of injury, thus precipitating traumatic inflammation; that in this stagnated blood toxic irritating gases are evolved (Co_2), exhausting the oxygen element and causing discoloration of tissues (ecchymosis) such as we witness in sprained ankles, contusions, black eyes, etc.; that this toxic gas causes an intense neuritis; that this neuritis as well as the cutaneous ecchymosis can be made to disappear at once by cupping these gases out of the tissues by means of a Lawler filter pump; that these gases can be made visible to the eye and can be photographed in transit from the tissues through water in a funnel or Bier cup; that injecting carbonic acid into the tissues lately inflamed brings back the severe neuritic pains in all their original intensity, while cupping the carbonic acid gas out of the tissues stops all the pains instantly.

In this connection it is well to remember Bier's remarkable experiments in preventing suppuration, by cupping thoroughly a threatening abscess. He accomplishes this by decomposing the coagulating factor (carbonic acid) formed in the tissues by fermentive processes, by removing its gaseous element (Co_2) as I have shown and described. Bier's explanation of how he accomplishes this result shows that he does not thoroughly comprehend the subject of suppuration in all its bearings, or understand all that he is doing on hyperemic lines. As additional proof that carbonic acid is the serum-coagulating, pus-forming factor, let us consider the action of hot grain poultices in precipitating suppuration. In the first place they act mechanically in preventing cutaneous Co_2 exhalation. All grains also contain their ferments which generate carbonic acid, which is absorbed into the tissues by osmosis, thus hastening the coagulation of the inflammatory exudates. Dry heat, on the contrary, favors Co_2 exhalation and tends, therefore, toward preventing suppuration.

While traumatism is regarded as the most prolific cause of cancerous growths, it is only because it precipitates inflammation and fermentation of the tissues, thereby evolving toxic gases which produce the tumor by causing vascular exudations, the neuritis and the other characteristic phenomena of cancerous growths. Furthermore, a careful study of each and all of the known causes of cancer also produce stagnation of circulation, local inflammation and fermentation of tissues, evolving in all cases, the same pernicious gases as those produced by traumatic action.

Let us consider for a moment the smoker's cancer. Smoking tobacco produces Co and Co_2. The latter unites with the watery secretions of the mouth and lips, forming carbonic acid, the same factor evolved by fermentation in traumatized tissues, while the mechanical pressure of the pipe held regularly in one place on the lip, causes blood stagnation and local fermentation and poisoning by its resulting gases, as has already been explained. Another fact of interest is that the cancerous growths always occur on the lower lips, never on the upper lip, which fact tends to corroborate my theories as to pressure and fermentation. (Openheimer and Mitchel, "Ferments and Their Actions," p. 152.)

Another fact of interest which tends to prove the truth of my theories is that where the pressure on the tissues is exerted is where the cancerous growth begins. The irritating character of the nicotine and pyridine that bathe the stem of the pipe as it presses on the lip, are factors of importance also. In smoker's cancer, therefore, there are three active causes at work, viz: the pressure of the pipe, inducing stagnation of blood and fermentation of the tissues; nerve irritation induced by nicotine and pyridine; the mucous absorption of the gases of combustion, which alone and unaided cause vascular paralysis, resulting in fibrous exudations which, becoming organized, form the tumorous growth.

Scars resulting from laceration of the uterine cervix are frequent causes of carcinoma of that organ, as every pathologist and well-read surgeon recognizes, and the reason therefore is explainable in the same logical way. Scars mechanically stagnate adjacent circulation, thereby inducing local fermentation and the formation of Co_2 and carbonic acid, which paralyzes blood vessels, inducing fibrous exudates which form the precancerous tumor. Continuing, the Co_2 gas poisoning causes the neuritis, the innutrition and mal-nutrition, the rapid proliferation of tissues and final evolution of the cancer cell.

The speed of cutaneous circulation is only 1 inch per minute or 720 times slower than that of the aortic circulation, which is one foot per second. The speed of the circulation of mucous membranes is probably about the same as that of the skin. We have shown that carbonic acid gas baths cause a paralysis of healthy cutaneous vessels. We have noted how its acid coagulates blood and its serum exudates, the albumen and fibrin of all soft animal tissues, as well as whole hen's eggs. It is easy to see, therefore, how carbonic acid gas generated in nasal, oral and pharyngeal circulations by inhaling poisonous gases and rotting enzymes (ferments) causes local paralysis of mucous blood vessels, thus precipitating inflammation, the formation of blood serum exudates, and final coagulation of the same into croupous, tonsillar and diphthereal membrances when the acid saturation of these exudates has reached the coagulable point.

We know that ligating vessels supplying a given part causes ulceration and death of that part, because nutrition and oxygen supply are both suspended. Paralyze gastric mucous vessels by fermentive gases and coagulate their contents with carbonic acid and gastric ulceration, hemorrhages and resulting scars naturally follow, while a continuation of this tissue poisoning finally results in cancer of the stomach, eventuating in death. Scars on the face resulting from injuries, from burns, or ulcers, X-rays, as well as warts, moles, etc., also mechanically stagnate local cutaneous circulation and, becoming irritated by repeated razor cuts, or by frequent picking, finally show enlarged vessels radiating therefrom, filled with darkened blood lacking in oxygen and poisoned with ferment gases (Co_2), finally result in cancerous growths; the reason therefor must be obvious to all. It is a well-known fact that naevi are prone to result in carcinomatous and sarcomatous growths, and the reason is plain to those who have read and appreciated the foregoing evidence. Their circulation is continually stagnant, always lacking in oxygen, their vessels being permanently distended with dark blood, poisoned with ferment gases. The blood of naevi is always stagnant; their vessels never contract, their muscularity being atrophic from long-continued disuse.

Senility is recognized as another prominent factor favoring the production of cancerous growths, and this is easily explainable according to my theories. The skin is a great organ for the continuous exhalation of Co_2 and is dependent on 100 per cent of circulation for 100 per cent of functional activity as a blood-purifying respiratory organ. A wrinkled skin is an anemic skin, and when circulating one-half its normal amount of blood, exhales but one-half its normal amount of the toxic gases of combustion, the other half remaining in the system, poisons the whole circulation and weakening the muscularity of all blood vessels, thus rendering them more susceptible to the paralytic effects of traumatism, which so often lead on to the development of cancerous affections.

Chimney-sweeps are prone to develop cancer of the genitals, as we all know. The reason for this is easily explained, standing as they do hour after hour, day after day over the mouths of wood-burning chimneys, the heat ascends the sweeper's limbs, sweating the thighs and especially the spongy tissues of the scrotum. The Co_2 resulting from combustion processes below at once unites with the water of the perspiration, forming carbonic acid. The scrotum being of loose, spongy texture, is very absorbent, and being saturated and poisoned with this irritant acid, its vessels dilate and become distended, fibrinous exudates naturally follow and these becoming organized the cancerous growth results.

It has been found that the incidence of cancer is greater in the neighborhood of sewerage farms and badly kept manure pits holding fermenting grain and animal excreta, and in those places where the air is poisoned with sewer gases. Foul air arising from cesspools has been found a most potent etiological factor.

Many so-called "cancer houses" on careful investigation have been found reeking with damp, foul air coming from disused, decayed sewers, open at the joints and oozing their decomposing filth into the cellar soil, thus constantly polluting the respirable air of these domiciles. Damp air is air holding moisture in suspension, of which mists and fogs are familiar examples. Each globule of water thus held in suspension unites by special affinity with Co_2 exhaled by the occupant's lungs, as well as that generated from the sewerage filth by the rotting enzymes already alluded to, thus forming carbonic acid. Constantly rebreathing this foul, stagnant air poisons more and more blood of the occupants of these houses, thus rendering them more susceptible to cancerous affections. It really makes no difference in the final result, whether the cancer be caused by general systemic poisoning or by local poisoning by the same generated in tissues traumatically inflamed. What we all must recognize sooner or later is that there is one all-potent factor always present in these tissues that alone and unaided is capable of causing, and does cause, all the symptoms of cancer from start to finish.

I have thus clearly shown by clinical and experimental evidence that cannot be controverted or set aside, that direct injuries paralyze the muscularity of blood vessels, thus precipitating traumatic inflammation; that aided and continued by irritating paralyzing gases, continually evolved in stagnated blood and tissues by fermentive processes, this inflammation is continued indefinitely; have shown how the precancerous tumor is formed from organized fibrinous exudates forced through traumatized, paralyzed blood vessels; that innutrition and mal-nutrition, together with the characteristic neuritic pains of cancer, as well as the hitherto unexplained rapid cell growth proliferation, are brought about by continuous poisoning, by these intensely irritating gases and their acid product.

In view of all these facts it is inconceivable and quite beyond belief that any other factor can coexist in traumatized tissues that is capable of duplicating the characteristic cancerous phenomena produced by the toxic gases of combustion or fermentation, as I have shown. The indictment and the evidence are complete, and the facts educed must challenge the attention of all those interested in finding the causative factor of this dreaded disease. Based upon these theories I have formulated various methods of treatment that are unique, which in my own practice have proved rapidly successful in cancer of the stomach, in epitheliomas (smoker's cancer), both primary and recurrent, as well as in recurrent carcinoma of the breast, all of which greatly strengthen my belief in the soundness and truth of my claims and theories. After I have treated a sufficient number of operable, as well as inoperable cases of cancer, especially uterine and abdominal cases, and learn the best way and methods of treating these, I shall publish the results for the benefit of the profession. In the meantime I shall be glad to treat forty or fifty cases without charge, whether primary or recurrent after operation, if sent to me. I welcome especially recurrent and inoperable cases, as I desire to test the remedies thoroughly that there may be no doubt of the efficacy of the remedies used, as well as th absolute truth of my theories. At present my methods are not only painless but bloodless. Not a single cell destroyed. My experience thus far tends to prove that knives and cautery, destruction of tissues and deformities resulting therefrom, are unnecessary; that when the tissues poisoning ceases, and the fermentive gases are eliminated; for a reasonable length of time, normal circulatory and nutritive conditions are re-established. Nature then reverses her pathological processes and healthy conditions of cell growth rapidly supervene.

CLIMATOLOGY.

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METEOROLOGY proper treats of the weather, and its causes, and of the physical laws involved, including the instruments by which the phenomena are observed. The difficulty of writing on such a subject lies in its magnitude. For our purposes brevity demands restriction to the science of Climatology, or the science of climate which is a branch of meteorology.

Climate is the permanent or average state of any locality with regard to atmospheric conditions, such as temperature, moisture, winds, cloudiness, and precipitation; distinguished from weather, which regards only conditions that may obtain momentarily. Weather is the current or passing state of the atmosphere, especially the conditions which affect man and his interests. It differs from climate, which represents the average of these conditions, or the average of all weathers.

Climate changes slightly and slowly, but weather is constantly changing. There may be days of sunny *weather* in a foggy climate, or rainy *weather* in a dry climate.

The atmosphere surrounding the earth may be regarded as an "ocean of air," extending upwards from the sea level of the earth's surface about ten miles; its greatest density is nearest the earth's surface, by reason of having to support the weight of its whole depth, and gradually becomes less dense as the distance from the earth increases. This law of decrease of pressure being known, it is used as a means of measuring the height of hills and mountains. Air has weight which we do not feel, because of the air and other gases within us that exert an equal outward pressure. Upon every square inch of the earth's surface there rests a weight of about fifteen pounds of air, so that upon the body of a medium-sized man the air presses with a force equal to 30,000 pounds.

The fundamental phenomenon of climate is atmospheric temperature, for its differences give rise to winds, and the direction of these, together with temperature variations, control precipitaton. Wind makes a bad climate worse and a good climate better. Cold, moist wind sometimes soothes, but more often depresses and aggravates catarrhal trouble. The aseptic condition of the air is also of the highest importance. The temperature of the air is due both to the sun and to the earth's internal heat, but the latter may be disregarded for practical purposes. The distribution of heat over the earth's surface depends partly on astronomical causes, such as the earth's spherical form and the inclination of its axis, which causes the poles to have a cold climate whilst that of the equator is hot, with varying temperature between, and partly on physical causes, such as the presence of land or water, direction and force of the winds, and elevation above the sea level. Not only is there a drop of one degree of average temperature for every rise of three hundred feet, but mountain ranges affect both temperature and rainfall in adjacent lowlands by deflecting air currents. Causes like these modify "astronomical climate" greatly, so that, for instance, Labrador is cold and treeless, while the British Isles, in the same latitude, are mild and fertile. New York and Naples, San Francisco and Washington, are subject to the same astronomical conditions of climate; their actual differences are due wholly to physical causes. Mean summer temperature of a hot region really gives no adequate idea of the thing for which, from a climatologic standpoint, the temperature is usually quoted; namely, *to indicate the degree of comfort with which one can live in the place.* Take, for example, Phoenx with an innocent 87° F. as the mean summer temperature. Yet in 1900 the temperature was half of the days over 100° F. Many days it was over 105°, and five days it touched 110° or over.

Climate exercises a direct influence on the moral and physical characterstics of the individual, by the necessities to which it subjects him, the habits it gives rise to, and the advantages it procures him. The most important factors in climate are (1) temperature, (2) air-weight as shown by altitude, (3) humidity, (4) Sunshine.

Sunshine is of the utmost value to the health seeker. Its heat, actinic and chemic properties, and its cheerful effect in leading to out-of-door life are indispensable.

The descriptive terms applied to weather—as cold, warm, dry, damp, wet, calm, windy, rainy, snowy—do not require special definition, but are used in a relative sense. For instance, what would be called cool weather in Cuba might be very warm weather at Mount Desert in Maine; and what would be called dry at Greytown, Nicaragua, would be damp or wet at Sante Fé, New Mexico. Weather is often named by a sort of metaphor referring to its effects. Thus fair weather is one originally suited to ordinary commercial operations, but it has been modified in its uses by the United States Weather Bureau to indicate the absence of rain and complete cloudiness. Foul Weather is that unsuited for such operations, generally rainy and windy. Dirty weather is that with low flying clouds and slight driving rains. Soft weather is that when the snow by melting, or the soil by rain has softened and impedes travel. Again weather is bright, sharp, tonic, sweltering (or sultry), according to its physiologic, and dull, close, gloomy, according to its psychic effects. By settled weather is meant a condition in which there is little intensity and little change in the meteorological elements from day to day. The converse of the proposition is variable weather. The weather of the Southern States and the Pacific coast is relatively settled; the most variable weather in the United States is along the northern boundary from the Rocky mountains eastward. A spell of weather is the continuation of one type, especially in regions of variable weather, and a change of weather is the change from one type to another.

The weather preceding an approaching storm is especially noted for its effects in producing neuralgia and rheumatic pains, and this is, in large part, due to increasing humidity. Indeed, changing humidity, by changing the rate of evaporation of the surface of the skin, and consequently its temperature, profoundly affects the individual and contributes largely to his comfort or discomfort. It is this which makes the difference between the bright and cheerful hot

weather of arid regions and the muggy, insufferable weather—close, moist and sweltering—which precedes summer thunderstorms at low elevations in the Eastern States. The temperature of evaporation is substantially the temperature that is felt, and it is this that makes the hot weather of New Mexico quite as endurable as that of Ohio.

Clouds are collections of minute particles of water suspended in the atmosphere. While fog is principally formed by the cooling of the lower layers of the atmosphere, clouds are due more especially to the rising currents which, when cooled to the dew-point, condense into cloud. The cloud masses, being heavier than air, tend to sink, but the sinking takes place very slowly, partly because the water particles and the ice needles which compose the clouds are very small, and because the rising currents to which they owe their origin counteract the sinking process. A cloud-burst is an extremely heavy rain over a small territory. It occurs only with local, not general, storms, most commonly in the hottest season and at the hottest time of day. The rain falls 4-6 inches per hour, but continues only a few moments. Meantime the phenomena of atmospheric electricity are usually marked.

Humidity is the amount of moisture or vapor of water in the air. In atmospheric phenomena the vapor of water passes into the air by evaporation. A given space at a given temperature can contain only a definite amount of water. If it contains less it will endeavor to fill up by evaporation; if it contains more the surplus moisture will condense. Vapor, in the atmosphere, by reflecting back to earth the heat radiated into the air, equalizes the temperature, and serves as a blanket to prevent the escape of heat. The enervating effect of a moist, hot atmosphere, is well known, and is in part due to the fact that such a condition of the air makes relief by perspiration impossible.

When a mass of air contains all the moisture it is capable of holding it is said to be *saturated*. The higher the temperature the more moisture it takes to saturate the air. If it contains less moisture than would saturate it at a given temperature, then the lower temperature at which this would be sufficient for saturation is called the dew-point. If the temperature of such air falls, it will sooner or later reach the dew-point and condensation will begin.

The percentage of the moisture in the air to what it could hold if saturated is called the *relative humidity;* it is measured by the hydrometer. Thus if the air contains a half of the moisture necessary to saturate it, the relative humidity is 50; if only a third, it is 33. The vapor of water, like any other vapor or gas, exerts a pressure in its endeavors to expand. The pressure or *tension of the vapor,* expressed in inches or millimeters of the mercurial column of the barometer, is one way of expressing the *absolute humidity,* or the absolute amount of vapor in the air. Absolute humidity can also be expressed in terms of the number of grains weight of vapor in each cubic foot of air. Rain is the moisture of the atmosphere condensed into drops large enough to fall with perceptible velocity to the earth. The formation of rain is in general a continuation of the processes of the formation of clouds, dew, and fog. The deposition of moisture depends on the cooling of the atmosphere.

The five so-called climatic zones—N and S frigid, N. and S. temperate, and torrid, are determined wholly by astronomical lines, the Tropics of Cancer and Capricorn inclosing the torrid zones at 23½° N. and S. of the equator, and the Arctic and Antarctic circles or N. and S. polar circles bounding the frigid zones, at 23½° from the poles. The temperate zones, which lie between the torrid and frigid zones, are thus each 48° wide.

The positions of these boundary lines were so chosen because the portion of the earth between the two tropics is that over which the sun, at some time during the year, stands vertically, and the polar circles mark the limits of the polar areas in which the winter sun does not rise daily. These lines are fixed, owing to the uniform inclination of the earth's axis to the plane of its orbit. Within these zones the distribution of land and water is very uneven. Water owing to its high specific heat, has an equalizing tendency on climate which is extended to adjacent land by the wind; hence the difference between an *insular* and a *continental climate.* The preponderance of land in the N. hemisphere makes its seasons more marked, and the earth's average surface temperature is thus higher during the N. than during the S. summer. On climatological maps the data of air pressure and temperature are usually reduced to what they would be at the level of the sea, thus eliminating the irregularities of the earth's surface. When the data thus corrected have been entered on maps, lines are drawn through the places having the same temperature, and these are called *isotherms,* while those through the same pressure are called *isobars.*

The climate of the United States embraces all varieties from that of the tropics to that of the arctic. Its chief peculiarity is the rapid alternation of temperature, due especially to the "cold waves" accompanying areas of high pressure, and now if we will remember that with the best means available, the forecasts of the Weather Bureau give a verification of 85 or 90 per cent., and verified by the same methods, the popular weather forecasting fakirs get only about 50 per cent., which a generous public forgets, we will speed up a bit, as heretofore, we have only been dealing the pack. We can now sit in the game.

It is important to know the effect on human life and human sickness of good climates, to which our invalids may be sent. The literature on the various health resorts are mostly by men who reside in them, and are made up variously of several elements. (1) Scientific facts, concerning temperature, humidity, cloudiness, altitudes, etc.; (2) personal experience and observation, and (3) arguments in favor of the particular climate and against the influences and qualities that rival climates possess. In this paper the third rule will be eliminated, and the second will be handled without bias or prejudice.

Climate is not a specific, but is a valuable aid; alone, however, it will not usually effect a cure. Medical care cannot be dispensed with because the patient is in a favorable climate. Climate and a suitable regimé of daily life and management are two

mutually interdependent factors, a combination of both giving the best results.

A health resort must possess facilities for comfortable living, pure drinking water, good sanitation, proper, well-cooked food, efficient attendants, medical and others, out-of-door facilities and ease of accessibility.

Few are aware that in almost a stone's throw (comparatively speaking), of their own doors lies a locality rich in beautiful scenery, replete with historical interest, a land where health and pleasure go hand in hand. In fact, on every side stands forth Nature, in all her untouched beauty and magnificence to charm the heart of the beholder.

Pine Crest, an isolated elevated ridge which slopes gradually to the Atlantic Ocean on the East, and the Delaware river or bay on the west is within three miles of Chatsworth railroad station on the Central Railroad of New Jersey, and is located in the center of the Pine Belt of New Jersey, between two famous health resorts, Lakewood and Atlantic City, and is situated on a hill 208 feet above sea level, being immediately surrounded by a dense forest of 200,000 acres of evergreen pine trees, and commands an unbroken view of 30 miles, showing great stretches of pine forests radiating in all directions. The abundant forests giving opportunity for walks and drives of great beauty, together with fine mountain climbing, all adding much encouragement to the searcher for healthful exercise.

The terebinthinated air is so dry that both heat and cold are wonderfully tempered. It is the damp air that chills in winter and oppresses in summer. Pine Crest seems to be within an iso-thermal belt, stretching from the Atlantic, that modifies the atmosphere as the Gulf stream changes the waters of the ocean, and the great forests of evergreen pine trees, acting as barriers not only temper the winds, but lend their aromatic piney scent which is a perpetual delight. The changes in temperature in forests are narrower and less sudden, and the climate is more equable at Pine Crest than at lower elevations, or in cleared localities. Nearly all the time can be spent out of doors, as the soil is sandy and porous, drying immediately after rain.

The ordinary inspired air of the atmosphere consists of inactive bi-atomic oxygen, held in dilution by nitrogen, and also contains in small amounts, water vapor, carbon dioxide, nitric acid, ammonia, ozone, argon, neon and organic matter, as well as dust, germs and other solid particles held in suspension. This is more quiescent and of much less potency than the tri-atomic oxygenated air found in the atmosphere of deep pine forests. The oxygen of the air at Pine Crest is augmented and made constant by the oxygen contained in the exudates of the *Pinus Palustris* or long leaf pine, and other plants which are found here in such abundance, and due to the low barometric pressure, the great diathermancy of the atmosphere due to dryness in summer, the sensible and real temperature fall rapidly as soon as the sun is out of sight, at night or by cloud. And owing to the absence of fog, low absolute and relative humidity, rareness of wind and abundance of sunshine, there are certain purely physical and mechanical effects produced. At low levels there is a muco-purulent accumulation in the bronchi from catarrhal conditions; irritation makes their walls flaccid, the mucosa swollen, the bronchioles dilated. The bronchi and bronchioles leading to the diseased area quickly dilate in rarefied air by the necessary deeper inspirations. Expectoration may increase, choked bronchi may be emptied and slight hemorrhage may occur. In consequence, quantities of bacilli are removed, stagnant and toxin-laden air is cleared from the bronchi and vesicles, and oxygen is admitted. The opening-up process brings into a functional state areas previously closed and the small spots of ulceration are exposed to the dry, aseptic air.

Some recent researches on the *influence* of *altitude* on the respiratory system are reported in *La Semaine Medicale* by Prof. A. Jacquet.

A series of experiments was undertaken to show the effect of altitude on the amount of oxygen inhaled and carbon dioxid exhaled. Apparatus that was both accurate and portable was selected and all tests were made under similar conditions. All irregularities arising from diet, muscular activity and temperature being especially guarded against. The following facts were ascertained: The relation between the oxygen absorbed and the carbon dioxid exhaled was peculiar. While passing from plain to mountain caused an increase in oxygen consumption of 8.8 per cent., the production of carbon dioxid rose 14.8 per cent. This shows that not only is the organic combustion more active, but that its nature also undergoes modification. This change does not appear for two days, when it becomes more and more accentuated.

On returning again to the plain the combustion did not follow the line naturally to be expected. A slight increase in the oxygen used remained for some days. This indicates the profound effect that altitude has on the physiologic nutrition of the organs. By a very careful special series of experiments it was shown that this enhanced organic combustion caused by altitude persists for a longer or shorter time after returning to the plain. This serves to explain the improved condition so commonly experienced after a trip to the mountains for rest or recreation.

Pine Crest is situated between the Atlantic ocean and the Delaware river, and the relative water area to land surface, the curative odors of pine and balsams, the altitude, and the absence of agricultural or industrial communities renders it the finest health resort in the world. The purity, rarefaction and dryness of the air due to radiation, and its freedom from germs and dust, its lessened pressure and greater radioactivity is easily accounted for. At any of the various coast resorts the air is always damp at night and often foggy, the blanket of moisture from the ocean prevents radiation, but the inland dryness at Pine Crest admits it freely with the resultant cool nights and warm days, this variation in temperature being advantageous, as the change from day to night acts as a cold douche following a hot bath, bracing the nervous system and stimulating the nutritive processes. This region then offers all advantages found in any part of this country and some of its own. In affording opportunity for free outdoor life, in an air rendered as nearly aseptic as possible by

continuous sunshine and great dryness lies the curative power of the climate at Pine Crest.

The drainage systems of this portion of the State of New Jersey are very simple, the streams as a general rule either flowing southeast to the ocean or northwest to the Delaware river. Although all the streams of southern New Jersey have a relatively small fall, they are distinguished by an even flow, which produces numerous fine waterpowers. The character of the soil throughout the Pine region varies generally with the altitude, the highest elevations, as at Pine Crest being gravelly, the intermediate sandy, and the lowest a sandy loam.

At the apex of Pine Crest the United States Government and Geodetic Survey have placed a triangulation stone, as a mark for determining the topography and relative position of distant points, since a precise triangulation was essential for the accuracy of a survey covering a large area, particularly taking into account the curvature of the earth, and for computing the distances, direction and differences of latitude and longitude. From Pine Crest hill the line of distance in perspective from the eye to any point of the plane or horizontal line in any direction is about 30 miles. Here the health-seeker enjoys the noblest forest scenery, and if a resident of New York, Pennsylvania or New Jersey within a few hours of his own home, thus eliminating that terrible scourge Nostalgia, one of the most depressing things met, and long, tiresome and fatiguing journeys which sap the vitality of the enervated.

The waters is from living springs, is tasteless, inodorous and transparent, it is the purest liquid possible, as it has undergone natural filtration through a sandy soil, and is absolutely free from suspended or dissolved impurities. The following analysis is assuring and confirmatory:

WATER ANALYSIS.
(Received June 7th.)

Appearance	clear
Color	none
Odor	none
Sediment	very slight
Total Solids	46.6 parts per million
Organic and Volatile	8.2 parts per million
Mineral Matter (non volatile)	38.4 parts per million
Silica	8.9 parts per million
Chlorine	2.4 parts per million
Calcium	7.7 parts per million
Magnesium	trace
Iron and Alumina	1.2 parts per million
Sulphates	15.0 parts per million
Free Ammonia	0.012 parts per million
Albuminoid Ammonia	0.007 parts per million
Nitrogen as Nitrates	0.172 parts per million
Nitrogen as Nitrites	none

Bacteriological examination shows the absence of all forms of intestinal or other harmful micro-organisms. The result of the chemical and bacteriological examination of specimen submitted indicates that the water is of a very high degree of purity.

The region known as the Pine Belt comprises the higher parts of the western and all of the eastern slope south of Long Branch. It is triangular in shape, its length being a trifle less than 100 miles. Dense growths of pine forests, cover the greater portion of the region, only a negligible portion being under cultivation.

Considering the district as a whole, the lowest normal temperature occurs in February and the highest in July; the mean temperature for February at the various Weather Bureau stations ranging from 29 to 34 degrees, and for July from 75 to 77 degrees. The seasonal normals show a considerable variability, although the march of the seasons is not quite as pronounced in this section as in the northern counties. The annual snowfall is generally less than 20 inches; at Pine Crest it does not form any considerable percentage of the annual precipitation.

The following data is taken from the United States Weather Bureau observations at Indian Mills, having an elevation of 76 feet and at Lakewood, having an elevation of only 54 feet, Pine Crest with an elevation of 208 feet and situated nearly equi-distant from Indian Mills and Lakewood can show more favorable climatological data, but as the observations lack government authenticity they are omitted, and investigations from the nearest points are given instead.

The Atlantic ocean on the east and the Delaware bay on the southwest exert a marked influence on the climate of southern New Jersey. The annual mean temperature throughout the southern interior exhibits a range of only 3 degrees, the highest (55 degrees) occurring in the western part of Cumberland County, and the lowest 52 degrees in the extreme eastern part of Mercer County, the northwestern part of Burlington, and the extreme southeastern part of Ocean County.

Precipitation for the Southern Interior of New Jersey.

1907	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Lakewood	3.95	2.76	2.93	4.26	5.96	6.03	6.28	8.74	.86	4.81	1.30	3.27
Indian Mills	3.18	3.45	2.93	4.61	6.03	4.73	3.06	5.53	1.05	4.37	4.91	4.71

Average number of days with .01 inch or more precipitation.
Length of record 8 years.

Indian Mills	11	9	12	10	10	10	12	11	9	7	8	11

Average Snowfall. Length of record 7 years.

Indian Mills	8.5	8.8	5.1	1.3							0.3	8.8

Highest Temperature. Length of record 8 years.

Indian Mills	74	67	84	93	97	101	103	97	94	90	79	72

Lowest Temperature. Length of record 8 years.

Indian Mills	-14	-6	9	17	30	37	45	44	32	23	10	-3

Prevailing Wind Direction.

Indian Mills	NW	NW	NW	NW	SE	SW	SW	SW	E	NW	NW	NW

In the Pine belt of New Jersey there are many square miles on which there is not a human inhabitant, and where the deer and rabbits find a lair to protect their race from extirpation. There are no temptations for invalids to overdo, so that rest and quiet in a tranquil out-of-door life comes easily to them. Few houses, no smoke, good water and abundance of sunshine all belong to Pine Crest. It could be well used, when conditions render the Rocky mountain plateau or Pacific coast unattainable or inadvisable. Heart, lung, kidney and rheumatic troubles would seem best suited to this sunny, dry, slightly stimulating climate, where almost every day in the year can be passed out-of-doors.

Dr Francis Marré in a recent issue of the Paris Eclaire speaks favorably of Mr. Prat's hot air apparatus in the treatment of cancer and tuberculosis. Prof. Allier has used Prat's apparatus with good results. The air is raised to a temperature of 500° or more centigrade. Toxic gases in cancerous growths naturally expand under heat and following the lines of least resistance pass out of the diseased tissues and into the open air.

SOME SIGNIFICANT SYMPTOMS IN DISEASES OF THE EAR, NOSE AND THROAT.*

BY SAMUEL MCCULLAGH, M.D.,

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IT may seem presumptious of me to ask of this gathering their consideration of some of the symptoms I shall speak of, but the frequency with which patients present themselves in an advanced or complicated stage of some disease, easily amenable to early treatment, suggested that this brief review might not be entirely amiss.

Perhaps the title I have chosen may be misleading as I have no intention of trying to cover the symptomatology of the diseases under consideration or even to point out the most striking ones. My desire is merely to indicate some symptoms common to other diseases the recognition of whose origin will very often speedily clear up an otherwise difficult diagnosis, and to recall to your attention some other symptoms peculiar to diseases of the ear, nose and throat the significance of which is too often lightly regarded.

Preliminary to my remarks I wish to say that I feel that every general practitioner should be able to use the head mirror and nasal and aural specula intelligently, and what I shall have to say contains a presupposition of this ability. I might include the laryngoscope also but the points of diagnosis are so fine in most doubtful or incipient cases of laryngeal involvement that the ability to use it is not so important though extremely valuable.

THE EAR.

Perhaps the most common complaint coming within the scope of this paper, as far as danger to life is concerned, is chronic suppuration of the middle ear. Happily the day when it was regarded as dangerous to check this discharge has almost passed and a rational cleansing treatment is usually instituted even though no examination of the ear is made. This symptom is often a precursor of a grave condition and a shot in the dark is not enough. The patient is entitled to an examination and it should always be made even though the condition is brought to your attention incidentally or casually. The fact that many chronically suppurating ears cause no trouble beyond that entailed by cleanliness is no excuse for neglecting the condition or dismissing it lightly. The common complications of chronic suppurative otitis media are known to you all but how often considered until they are developed. Even if the patient escape these dangers there is one sequela, too generally disregarded, which always appears—impairment of hearing. Its development is insidious but none the less constant, though the degree, of course, varies. Practically speaking, this lost power of hearing can never be restored.

Permit me to enumerate, in passing the complications to which I have referred.

Acute exacerbations with mastoiditis, lateral sinus thrombosis with or without involvement of the jugular vein, epidural abscess, brain abscess—a vast majority of these cases are due to a diseased ear—meningitis, labyrinthitis, acute and chronic, are all on the list, well recognized as to their origin but how often passed in review in the presence of this symptom?

*Read before the University of Pennsylvania Medical Society, New York, May 18, 1911.

Do not understand from what I have just said that I believe a so-called radical operation should be performed on every patient with a chronic discharge from the ear but I do insist that every such patient is entitled to at least an occasional examination to note the progress of the disease and a careful and exact test of the hearing power for the same reason, just as every patient suffering from nephritis is entitled to—and usually gets—a careful and exact urinalysis from time to time. On the other hand there are cases where the radical operation is not only justified but imperatively demanded and these cases should have prompt surgical relief.

Before leaving this subject I wish to call your attention to the fact that there are, comparatively speaking, a surprisingly large number of patients, both in private and hospital practice who are unaware that an ear is suppurating when such is the case. In this class of patients the discharge is, of course, very scanty and becomes inspissated and mixed with cerumen or is cholesteatomous. Therefore, it is not wise to eliminate the ear as a source of trouble merely, on the statement of the patient without further examination.

In acute infections of the middle ear adults can be trusted to seek relief from the acute symptoms, at least. Do not delay in affording that relief. Many cases will resolve without paracentesis but many a mastoid infection would have been avoided and many a chronic suppuration would never have reached that stage if a free incision had been made through the drum membrane early. That is the kernel of the whole treatment as it is throughout the entire realm of surgery—free drainage. A free discharge from an ear is no indication that drainage is free. One glance at a small perforation high up in a bulging drum with the pus forced out under pressure is sufficient to indicate the treatment. In such a case the amount of discharge appearing at the external meaters would seem to indicate that drainage must be good. It is an impossibility for the middle ear alone to secrete this amount of pus. The antrum at last must also be involved. The necessity for free drainage is doubly imperative. An examination of the drum always reveals the condition. An estimate based on the amount of pus visible at the external meatus will often be misleading.

In infancy conditions are different and the diagnosis often must be made on objective signs alone. The fact that otherwise obscure diagnoses are often cleared up, at this time of life, by an examination of the ears is well recognized, but how often does the appearance of an aural discharge point to the diagnosis? How many blameless infantile gastro-intestinal tracts are still physicked for the sins of a middle ear?

Just here I would like to make a plea for the immediate removal of adenoids when they complicate an acute infection of the middle ear. They probably have been the cause of the infection in the first place. The advantages of this step are that the danger of infection of a healthy middle ear subsequent to an adenectomy is eliminated; the local depletion relieves the congestion; better drainage is provided; resolution occurs more promptly and one anæsthetization suffices for the paracentesis and adenectomy. I know of no disadvantage. You may recall that the eustachian tube, in early infancy, is horizontal, about half the length of the adult

tube with the adult diameter and that its pharyngeal orifice is below the level of the hard palate instead of above it. Proportionately to the child's age it relations approach those of the adult type. In a consideration of this region from an anatomical standpoint the dehiscences and imperfectly closed sutures of early childhood also readily explain the ease with which intracranial complications may occur at this time of life. In cases where there is no reason to suspect the ear as the focus of infection, even where there is or has been no discharge or where it has been transient, bear in mind this condition of the bone and the possibility of intra-cranial involvement of otitic origin without marked disturbance of the middle ear.

In adults latent mastoiditis with extensive destruction of bone but with no subjective symptom except the discharge until the explosion occurs must always be watched for.

It may seem almost frivolous to remind a gathering of physicians that impacted cerumen is not the only cause of deafness but the number of patients who give a history of having received a wash of some kind to soften or remove the wax when the deafness is due to some other cause must be my apology for mentioning the fact.

THE LARYNX.

It cannot be too often or too forcibly reiterated that persistent hoarseness, however slight, is always the first symptom of cancer of the larynx. In the presence of this symptom, in persons of middle age especially, a careful examination of this organ is always demanded and if, happily, the report is negative still valuable information pointing to some other hitherto unsuspected lesion may be uncovered. Cancer of the larynx represents about 1 per cent. of all cancers and according to Semon, with those views most laryngologists are in accord: "When discovered early and radically treated offers a more favorable prognosis than cancer in any other part of the body." Certainly nothing can be more pitiful than the lingering end of a patient with an inoperable cancer of the larynx.

I do not mean to ignore the existence of simple chronic laryngitis or exclude other etiological factors in the production of hoarseness. I merely wish to reemphasize the importance of this apparently trivial symptom in some cases and to add my plea against its light dismissal from consideration.

NOSE AND THROAT.

Undoubtedly on occasion we are all brought to a sudden, sharp and often unpleasant realization that medicine is not an exact science; that with us one and one do not always make two. The one of the lesion plus the one of the patient's personality equals the text book reaction of two only rarely. A result varying from practically zero to almost anything greater must be looked for and there is no answer in the back of the book to be consulted as a check. Oftentimes we know the right answer when we hear of the success a colleague has obtained in solving the problem, perhaps by the use of some simple expedient. I think I may say without fear of contradiction that there is no region in the body where the answer to a given problem is harder to solve off-hand than in the nose. For an example I may cite the reaction caused in various individuals by varying degrees of pressure upon the middle turbinate usually due either to its hypertrophy or a deflection of the septum or a combination of the two factors. The life of one patient may be made fairly miserable by an apparently simple contact of this body with the septum while an examination of the next patient may reveal both turbinates tightly wedged between the septum and the external wall of the nose with no symptom attributable to this condition and in blissful ignorance of any abnormality in the nose.

This digression is by way of introducing headache as a symptom of diseases of the nose. The important part played by the nose in the causation of this symptom, common to such a wide variety of disease, is of course well recognized and areas of localization have been mapped out by different workers, into which field it is not my intent to stray. The suggestion I wish to make is,—Do not dismiss the nose from consideration in puzzling cases where headache is the chief complaint after a cursory examination merely. Remember how vascular the structures contained therein are and how constantly changing the picture is. I have already spoken of one cause of headache—pressure on the middle turbinate—that may be easily overlooked, or disregarded if observed, because enough weight is not given to the personality of the patient.

Another obscure cause of headache may be accessory sinus disease without nasal discharge or without purulent discharge. Examination of the nose will show no pus in the middle meatus and the patient will deny excessive nasal secretion. Posterior rhinoscopy may point to the sphenoid sinus or posterior ethmoid cells or further examination may be necessary to eliminate the sinuses from consideration.

Yankauer in speaking on this subject says: "When a patient with recurrent headache of long standing, whether nasal symptoms such as discharge, etc., be manifest or not, is subjected to one action of a steam inhalation, if the headache be relieved, even though the relief be only partial or temporary, it can be definitely stated that the cause of the headache will be found in one of the accessory sinuses of the nose, or in the neighborhood of their natural orifices.

The fact that this procedure, which may be called a test for the nasal origin of headache, gives reliable information only when the result is positive, and that failure of the inhalation to relieve the headache does not necessarily exclude accessory sinus disease does not invalidate the test; nor does the fact that it gives us no information as to which sinus is affected.

"For the general practitioner who is unprepared for, or unskilled in the more exact diagnosis of intra-nasal conditions, this test constitutes a simple and harmless procedure which will enable him to determine the cause of many a persistent headache which has long resisted his efforts at internal medication."

The etiological role of disease of the accessory sinuses in obscure cases of involvement of the eye is receiving careful study at the hands of both opthalmologists and the rhinologists and our knowledge of the inter-relations of the two is being daily extended.

Under the heading of cough I will merely mention elongated uvula and the rare reflex cough due to irritation of the external auditory canal usually by impacted cerumen. The cough due to inflammation or irritation of the upper respiratory tract caused by mouth breathing, perhaps only during sleep is, perhaps, not often enough attributed to its proper source and the persistent

irritating cough from an hypertrophied lingual tonsil surely is not.

THE TONSILS.

Fortunately the malign influence of hypertrophied tonsils and adenoids upon the development of the child is becoming so thoroughly appreciated by the laity that to-day parents often demand an operation when this condition is present. But how does the case stand with regard to adults? In our new knowledge of the methods of infecion in various diseases the throat plays a more and more important role while the list of complications, many severe, of acute infections of the tonsil grows daily larger. Thanks to the researches of Wood and others the direct path for the tubercle bacillus from the tonsil to the lung has been uncovered. Yet how many adults are permitted to suffer from the intense poisoning and subsequent depression of repeated attacks of tonsillitis or peritonsillitis without being advised of the necessity of a simple operative procedure that will remove all possibility of future trouble and eliminate any posssibility of complicating disease? Undoubtedly the main reason for this ultra-conservative attitude is the inability to forget that disease of this organ is not necessarily associated with hypertrophy. Such, of course, is not the case and the most troublesome tonsils are apt to be the so-called submerged tonsils which often can be seen only when the anterior pillar is drawn aside.

This brings us to the question of the surgery of the tonsil. From what I have just said it is apparent that tonsillotomy will not meet the requirements of the situation. A further argument against its employment is the fact that the velar lobe or portion is never touched in this operation though its removal is of the utmost importance. When tonsils are to be removed a complete dissection or a removal with the capsule—tonsillectomy—is the operation of choice. Slicing off the top of the visible portion of a tonsil is no more a surgical procedure than amputating an appendix through its middle because only the tip appears diseased would be. The main argument usually advanced in favor of tonsillotomy—the fact of the ease of its performance should not be dignified by the term argument—is that many cases have been entirely relieved by it. Does the fact—to turn again to the appendix—that many cases of appendicitis recover without surgical interference and with no subsequent recurrence argue that the unncertainty of the outcome should not be rendered a certainty by a proper operation?

ADENOIDS.

Under this heading I wish to remind you that adenoids are not found in children only. They do persist into adult life more often than is recognized. In childhood is it not possible that many puzzling cases of continued fever, with or without septic symptoms have been difficult of diagnosis because enough weight has not been given to adenoids as a causative factor, even though their presence is noted? Consider for a moment the anatomical structure of adenoid vegetations. We have a mass of lymphatic tissue richly supplied with blood vessels, so arranged that although confined in a small space the absorbing surface is comparatively very large. The conditions for bacterial growth are ideal. The intense poisoning that may accompany an acute follicular tonsillitis is a matter of common knowledge. Adenoid tissue has practically the same microscopical structure. I do not feel that enough attention has been devoted to the elucidation of this point. Its solution is not in the hands of the rhinologist as these cases would be but rarely seen by him.

MALDIGESTION.

The relation of diseases of the nose and throat to disturbed digestive function may be likened very often to the old question as to the priority of the egg or the owl. Their frequent correlation, however, is an established fact even though it is impossible to settle the question of responsibility in some cases. I think that the rhinologists are more alive to the importance of this correlation and more frequently take steps to correct the accompanying disturbance of digestion when the case is presented to them for treatment of the nasal condition than do the internists to correct the nasal lesion when the patient seeks relief for the disordered function of the gastro-intestinal tract. The stomach is a long suffering organ but a continued and constant supply of tough, septic mucus or muco-pus, epithelial detritus and dust, amounting to several ounces a day will in time cause a revolt. When this occurs the source of supply is stimulated to renewed efforts and the vicious circle is complete. I am sure a closer investigation on this point would hasten the relief of many victims of the "great American disease."

Much has been said about the specialist losing the broader outlook on medicine and forgetting that there are functions of the body other than those he deals with which he must take into consideration. Unfortunately these strictures are too often well founded. My plea is that, perceiving the mote of restricted view in the eye of the specialist thou cast out the mote of inattention to detail from thine own eye, if such be therein, and make proper use of the refinements in diagnosis that have been developed by these specialists, the abstract value of which all freely admit.

In closing I wish to express my hope that I have not conveyed the notion that I possess an exaggerated sense of the importance of the diseases under discussion in the scheme of life. My intention has not been to draw a gloomy picture of impending death to be held before the eyes when a patient gives a history of chronic suppuration of the ear or an attack of tonsillitis. I have merely wished to recall to your attention the fact that symptoms many times regarded as too insignificant to note and often of no consequence if taken early may, through neglect, become changed into omens of dire significance.

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Multiple Abscesses of the Nasal Submucosa in Leukemia.—J. P. Tunis (Am. Jour. Med. Sc., Jan., 1911), reports one of ten cases in which he examined the nares post mortem; and this was the only case which showed the condition described. A man aged 44 died after a three week's illness from acute lymphatic leukemia. Epistaxis, hemorrhage from the gums and swelling of the cervical glands were the prominent features. Portions of mucous membrane removed from the middle and inferior turbinates showed to the naked eye numerous punctate hemorrhages; microscopically there was much thickening with edema and round-cell infiltration, and in places small abscesses with numerous streptococci in their border zone. Tunis estimates there were at least 300 such abscesses in the nasal mucosa. Interstitial hemorrhages in leukemia are the rule, but their development into abscesses is rare.

ENVIRONMENT AND TUBERCULOSIS.

BY JOHN B. HUBER, A. M., M. D.

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THERE are and have been very wise men who have declared that all the ills which human beings suffer are due to heredity. And on the other hand there have been and are equally wise men (so far as the rest of us ordinary mortals can judge) who consider that heredity has nothing to do with the matter, and that all diseases are due to unfortunate and unhealthful environment. Is it not likely that the truth lies somewhere between these extremes—and that about half way? Are not both of these forces influential in most cases of disease? This paper then, while recognizing the baneful effects of a vicious heredity, is upon the way in which an untoward environment may predispose the body to tuberculosis.

Herbert Spencer truly observed that "whatever amount of power an organism expends in any shape is the correlate and equivalent of a power that was taken into it from without." Now, it were impossible to set down even a mere enumeration of environmental factors predisposing to tuberculosis. Because living itself is but the body's response to environmental influences, either physical or chemical in character; and such influences as these are about as numerous as are external phenomena, which are indeed infinite. Among the uncountable agencies which, working from without, may make the body receptive to infection, tubercular or otherwise, I emphasize here only some of those which are of common experience.

Mechanical violence—various forms of direct injury resulting in contusions, open wounds and lacerations—greatly favor tubercular development. A break in the skin is not essential, for the bacillus may penetrate the unbroken skin and mucous membranes. It were difficult, moreover, to estimate by an external appearance of a trauma the extent of an internal injury. I have made many autopsies (in an experience as coroner's physician) when the external contusion was very slight indeed, whilst whole organs, such as the liver were crushed. Besides we must recognize the element of shock in these cases, as predisposing to tuberculosis, apart from the extent of the injury itself.

"Surgical tuberculosis, resulting frequently from an initial trauma, may appear in bones and joints; thus may (and probably very frequently do) originate the bone and joint 'white swellings' and 'cold abscesses' which manifest tuberculosis in children. The tendons of muscles and various tissues and organs may by reason of traumatism become a nidus for tubercular infection Foot wounds may result in infection of the lymph glands in the region involved.

Inhalation of insoluble, gritty particles (pneumokoniosis) induces in workmen a true tuberculosis. Continued pressure on any part of the body may cause wasting, or local death of tissue, making it receptive to microbic invasion; and this condition may lead to general toxic changes which would facilitate the development of tuberculosis in the organism.

Various states of the atmosphere—altitude, temperature, humidity, season—may be predisposing. A field by no means thoroughly explored (though it has been much worked) is that of the effect of weather in predisposing to tuberculosis. Although consumption occurs in greater or less degree in all localities, it is *pari passu* more prevalent in variable climates and where there is much moisture. It seems to prevail inversely as the altitude progresses above sea level. A rare atmosphere strengthens pulmonary respiration by requiring greater effort in breathing; this has ever been one of the points in favor of such high altitudes as those in the Alps and in Colorado. Long-continued heat predisposes by depressing the vital powers.

Other factors have to be considered as concomitant. The more isolated and less densely populated a region the less there is likelihood of infection. Climates are modified, in general favorably, by trees, rocks, rivers, lakes, drainage, winds, rains, the proportion of sunshiny days—and the like. Vegetation has an important regulating effect, modifying the winds, equalizing the temperature and diminishing the dust. Animal life (and this is of course an axiom in medicine) depends upon the free oxygen contained in the air. Pure air is essential to normal metabolism—the conversion of oxygen and food stuffs which are injected into healthy tissues. An imperfect supply of oxygen results in various degenerations and increases susceptibility to infection. Atmospheric humidity is related to animal perspiration. When the temperature is low the sweat usually evaporates as rapidly as it is excreted (insensible perspiration). As the humidity increases sweat may transpire; but its evaporation is progressively delayed until, when the humidity reaches the saturation point the skin remains constantly wet. This reduction in evaporation diminishes the natural heat dissipation so that with a high relative humidity, excessively low or high degrees of temperature are poorly borne. Great humidity, by interfering with the normal heat regulation of the body, may indirectly favor "catching cold;" and by devitalizing the tissues, favor the development of infectious processes—not infrequently tuberculosis. Infection, as we know, is in general more prevalent in variable seasons. There is, for example, more such illness in March than in January, when the weather is more uniform. Consumptives, by the way, do better in the winter months than in the summer. Marine climates, though ideally bacteria-free, are apt to increase coughs.

A very dirty atmosphere is predisposing to tubercular infection. When Dr. Woodbury was street cleaning commissioner of New York City he had exposed pairs of gelatine plates under precisely similar conditions in various parts of New York City. Of two such plates one would represent atmospheric conditions in densely crowded districts, the other in a very clean part of the town. One of these plates, for example, was exposed in one of the most densely populated metropolitan districts, and it became saturated within a few minutes with bacteria, molds, fungi and all kinds of impurities deleterious to health; its companion plate, which was exposed for the same number of minutes at Madison avenue and 66th street, was almost wholly free from impurity. The former is a very unclean district; the latter is very much more salubrious. In this relation is Miguel's very suggestive table of the number of bacteria found in a cubic metre of air in various localities and altitudes:

In the sea, at 100 kilometres from the coast....	0.6
Altitudes of 2,000 metres.....	3.

Summit of Pantheon	200.
Observatory of Montsouris	480.
Rivoli street, Paris	3,480.
A new house	4,500.
The air of sewers in Paris	6,000.
An old house	36,000.
Hotel Dieu, Paris (a hospital)	40,000.
Pitie Hospital	79,000.

A soil which is clayey or moist or marshy or not well drained is unwholesome. Healthful soils are sandy, loamy or gravelly; such are warm and dry and readily drain themselves, especially where there is a slope.

An unhygienic house is a factor in environment very predisposing indeed to tuberculosis. Professor Jacobi has emphasized the grave danger to adults and especially to children in our bedrooms. This is indeed "a bedroom disease." With what right is it so called? "A baby is at least sixteen hours a day in that narrow, confined, airless, windowless bedroom; a child at least ten or fourteen hours, the greater part of its young life. The air is the reverse of what it should be to protect blood formation, circulation and digestion. What can be done to improve it to a certain extent? Some window should be open all night and day. If there be none in the bedroom there is one in the adjoining front room, or the kitchen at the rear. Unfortunately not always, for we are still in an era of the selfish refusal on the part of man to be held responsible for the evils and ills of his neighbors. We are hardly entitled to call ourselves a civilized community when 50,000 families at least, with three to six children each, live each in one light room and one or two small dark holes. In these holes they breed tuberculosis. But it is no consolation to you that they die of it. Before they die they infect their neighbors; and their neighbors, in the capacities of seamstresses, servant girls, laundresses, cooks and teachers, infect you and your children and your friends' children."

A habitable enclosure—that is a hut, a tenement, a factory or a vehicle, has been well classified by Dr. Flick as "the granary of the tubercle bacillus outside the host." Here the soil is prepared, the seed is garnered and implanted, the tender shoot reared, the full grown plant nurtured, matured and harvested. Obversely to normal, natural growth, this seed thrives in dampness and darkness. In the house tubercular matter may remain vital for months or years. Up to within recent times the consumptive, being afflicted with chilliness and a general sense of distress and illness, has sought shelter in some enclosure, being deluded with the idea that the further he could get away from sunshine and pure air, from draughts and the cold, the better were his chances of recovery. Before our anti-tuberculosis propaganda Michael Peters wrote: "I know nothing more hideously fetid than the bed-chamber of a rich consumptive. It is a spot carefully closed, where both air and hope are alike forbidden to enter. There are sand-bags to doors, sand-bags to windows, thick curtains envelop the bed, where the unfortunate consumptive swelters in perspiration and an atmosphere twenty times respired, twenty times already contaminated by contact with his own diseased lungs."

Under such circumstances, then, does the recluse and the home-body easily become a prey. And we must note by way of parenthesis that domestic animals are prone to tuberculosis and are also likely to harbor the bacillus, to disseminate it in the home. Now, occasional contact is not dangerous, but intimate, repeated and prolonged contact with a consumptive, or with a place or thing that has been permeated with tubercular matter, is likely to end in tuberculosis. The mere presence of a few bacilli will not occasion the disease, as would be the case with the exanthemata. Besides, the virulence of the tubercle bacillus differs in intensity.

Every one has some resisting powers; with every one there is a minimum dose of bacilli, varying according to the individual constitution which will give an implantation. And such implantation is facilitated when the organism is subjected to impure air and poor food in dark, unventilated rooms. An enclosure is the one place in which contamination can become sufficiently intense to create an environment capable of overcoming the resisting power. Tubercular matter, ejected in a house, unless immediately devitalized, dries artificially, and is distributed about in particles, varying in size from weighable quantities to impalpable dust. In these particles the bacillus is cachéd and preserved. Thus in the course of time much vital matter accumulates in a room, and occupancy of such a room would mean constant inhalation and frequent swallowing of the infective material.

The home and the workshop are the two kinds of enclosure which offer the best environment for implantation. Tuberculosis is a house disease. The bedroom, and next to the bedroom the dining room, are the parts of the home most dangerous in this respect. In the bedroom the consumptive spends his last weeks or months—a period during which the disease is most intensely infectious. Often among the very poor the dining room is used as the only living place for the sick one until shortly before his death.

The workshop is a very common means of spreading tuberculosis. Cornet, of Berlin, considers it the most common of all; "the consumptive workman infects his fellow workmen more than he does the members of his own family." Workshops are often unduly crowded; the air-space is likely to be inadequate for the number of employees. In some trades the air becomes charged with irritating vapors or particles. Noxious dirt may be introduced upon the shoes of employes. Sometimes workmen are suffering from infections which do not incapacitate them, but which lower their vitality and thus predispose them to tuberculosis. Usually the workman, observes Flick, "lives in a house which has been built for money-making, about the sanitary condition of which he has practically nothing to say. He cannot select his place of abode, because it is necessary for him to be near his work. He has no voice in the sanitary construction or management of his workshop. It is true he can work there or not, as he pleases; but if he wants to earn bread for himself and his family he must work there or in a place like it."

Tuberculosis is a very chronic disease, and usually runs a long course before its victim become incapacitated. Some consumptives work thus for the greater part of a working lifetime, occasionally having to stop for a few weeks for rest and treatment, and again returning to work as soon as they are able. Unfortunately, unclean and untidy consumptives very easily contaminate the shops in which they work, by promiscuous spitting. One consumptive can produce an environment around his own stand capable of implanting the disease

in those who are next to him, and before long these are associated with him in the task of polluting the shop. Deaths will occur from such a shop at regular intervals for an indefinite period, so long as it is permitted to remain contaminated.

Hotels, churches, public halls, and places of public convenience, in which people stop for a short time only, are not so dangerous, because a consumptive rarely remains in them long enough to produce an infectious environment; and again, because healthy people seldom remain in them long enough to get an implantation. Cleaners and caretakers of such places are in some danger; but for the casual visitor there is extremely little. The house nurtures the tubercular growth when an implantation has taken place. The disease always begins in a very small way. The first crop develops and runs through its course; and the second follows—perhaps a little longer than the first. Then come a third and a fourth, each a little larger than the preceding one; until finally so much tissue has been invaded and destroyed as to make death inevitable. Things which have been intensely contaminated by having been used a long time by a consumptive are very likely to transfer the disease to others when kept or used indoors. Cornet found dust containing virulent tubercle bacilli in the neighborhood of a bed in which a consumptive had died six years after the death.

House life certainly plays an important role throughout the entire course of tuberculosis, to its culmination in consumption and death. With every recurrent crop of tubercle bacilli the organs become more and more embarrassed and the economy less able to carry on the warfare against the disease. In the lungs the air supply becomes less with each destruction of lung tissue. Tuberculosis makes its progress generally because its victim is shut up in a house where he cannot get fresh air. In the houses of the poor an ample and adequate supply of fresh air is impossible. European observers have concluded that the large mortality from tuberculosis, especially among the poor, is to be attributed largely to the crowding of tubercular cases in certain houses. Therefore they quite logically and rightly consider that the fight against tuberculosis is to be carried on in the dwellings of the very poor.

40 East 41st Street, New York.

TREATMENT OF STAMMERING.

By Wm. Lilliendahl, M. D., New York.

IN taking up the treatment of stammering, we will see that there are four things to be considered, and that while all are of some importance, two are more essential, to effect a perfect cure of this disorder.

In their order of importance, it is evident that if we can remove the cause, the effect cannot occur; and, in the article on causes, the duty of the physician was plainly indicated; therefore, the first is:

TREATMENT OF PHYSICAL DEFECTS.

and, in this connection, re-read the first part of the article on the "Causes of Stammering." To repeat a little: children who acquire this speech defect are generally very impressionable; have a tissue fibre more responsive to the ordinary sensatory impressions; have blue eyes, light hair, clear complexion, thin smooth skin, and are bright and active; and are apt to become stammerers upon what might seem a slight excitement. Let the physician carefully examine into the etiology and treat all the physical tendencies and body habits which are adversely affecting the nervous centres (especially the sexual centres) and stammering never will become apparent, much less a permanent life-long misery.

But, most cases continue because these golden opportunities for early treatment are neglected, and we have a picture of stammering somewhat like this: facial and body contortions; vocal peculiarities, such as speaking in an unnatural tone, fearfulness, timidity, hesitation in speech and labored breathing, etc. What would we infer is the mental picture in the mind of a stammerer at this time.

All these are the result, the consequence of the attempt to speak and *not the cause* of stammering—that cause is now a mental state of confusion, and this should be recognized, for the relation between the mental confusion and the confusion in language is very close; *and,* the second thing then to do is to

TRAIN THE MIND TO CONCENTRATE

so that in expressing a thought in language, there shall not be a multiplicity of thoughts struggling for utterance at one time. It is seen that the one purpose of thought is that it may be expressed in language—we are not aware of any other purpose for thinking, and naturally a mind full of thoughts at one time is in confusion. I think this will be made clear to any one in this article, presently.

All methods of treatment to-day which can justly claim any degree of success, are founded on just this principle, i. e., *distraction of the mind while speaking*—diverting the mind from the speaker, by some act (or device) of some part of the body, more or less rhythmical and regular as to time and force; such as tapping the body once for every syllable or word spoken, or keeping time in speaking, or speaking melodiously as if singing, etc. But, the trouble is that these still complicate the matter, for at best there are two thoughts at work, one what the patient wants to express in language and another the enforced thought-method which really has nothing to do with the thought to be expressed—the labor and strain on the mind to carry out this plan is too great to be long continued. What then is concentration of thought, and how can it be acquired?

Let the *natural* logical *relation between objects* brought before the mind *and the way we express knowledge of them,* be the explanation.

For instance, the way to concentrate, is to take an *interest* in the thing we are seeing or thinking of. For a concrete example, take a hat, and let the mind dwell upon its qualities, such as black, felt, high, new, round, shiny, smooth, etc., and then let the child just tell what he can about that hat, one quality at a time, and so on, with all other objects in the room, and soon he will begin to think of everything that way. This is the natural method of thought in its relation to language, and non-stammerers think that way, or else even they hesitate as can be seen at any time. Any child or adult can quickly be shown how to concentrate by taking an *interest* in a thing—it does not seem necessary to say more on this point. The important thing is to create and arouse the natural *interest* in the object and express it.

BREATHING.

The really important thing to consider is how to correct bad habits of breathing. The lungs and chest

have been compared to a bellows: that is, by expanding the chest walls the air must rush in, and yet it is usual to state something like this: "Stand before an open window and *draw* in the air, gently at first," etc.—and the bellows idea is lost in the practice. The correct bellows-way is to expand the chest and ribs by a conscious effort and *permit* the air to rush in as it will, and then let it go out, at will. Correct breathing as a cure for stammering is not apparent, but it is useful.

PURE TONE AND CLEAR ENUNCIATION, ETC.

The placement of the voice is well to know, but not so necessary in the treatment as was once thought—the same applies to the enunciation; however, it would be better to know something about them in carrying out a full treatment—but as this really belongs to the elocutionist, it could be dismissed. I would say, however, that the thing is to get the voice vibrating by holding on to the tone (the vowel tone in the word) as long as possible and this can be done by slurring words somewhat and never letting the tone drop while speaking a phrase. Good enunciation can be obtained by trying to speak distinctly at all times. The best way to explain breathing and pure tone is by demonstration.

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ABOVE THE LEVEL.

BY A. D. HARD, M. D., MARSHALL, MINN.

THE general practitioner of to-day must be above the level to achieve any thing above mediocrity in the way of fame or finance.

Fierce competition has arrived in the ranks of the profession and is driving the unobtrusive and mild-mannered doctors to the wall.

Quiet integrity is being relegated to a back seat by presumption and pretense, and the family physician who does not introduce some feature to deflect some of the "lime light" from the aggressive interloper who successfully uses P. T. Barnum tactics to take the entire field will gradually subside into the remote corner where he is now being kicked.

City surgeons and specialists are calling upon the country doctor to "refer" cases to them for expert treatment, and are gratefully thanking him for the obligation which they thus admit, but a holy horror for the unethical division of the fee tends toward depriving the old healer of the rural roads from receiving any compensation for his part of the work, and he is gradually approaching the era of medicine when he will complacently work for nothing and board himself.

If this is pessimism make the most of it. But fault finding without suggesting a remedy is futile, and my object is to suggest a method by which the ordinary general practitioner may be able to meet the wiley cleverness of the present product of medical college output and retain his foothold upon the ground that is fast becoming slippery and uncertain.

My first suggestion is that the country physician should dispense his own medicines with his own hand. At the present time the pharmacal houses are putting out the most elegant preparations of the well known medicines possible for practical pharmacy to produce. These products are not as a rule kept by the village drug shops, and this fact furnishes a good excuse for congenial relations with the prescribing druggist without educating him up to the use of your favorite prescriptions as a side line to his legitimate business.

No prescribing physician can forecast with any certainty the color, taste, small or probable effect of a large part of the preparations which are put out by the druggist on his orders.

U. S. P. tinctures, fluid extracts, elixirs and mixtures vary in their quality to a much greater extent than is usually supposed. Some of this variation depends upon differences in the nature of the crude drug, differences in individual methods of preparation, and differences in integrity of the producers. The prescribing physician reaps the jumbled product of the entire list of variations.

The dispensing physician can use his judgment based upon his own experience in selecting reliable drugs and reliable manufacturers.

The druggist is a commercial vender, and he buys where he can buy the cheapest and sells for all that his customer will stand.

The dispensing physician should naturally not be influenced by such inducements, as his desire is to secure actual results instead of temporary profits.

Another feature of special advantage is the use of a means of vibratory treatment of chronic diseases. The increased elimination of excretory products by stimulation of the circulation as a result of mechanical massage will deprive the pompous osteopath of his only valuable asset. His replacing of displaced bones and tendons and nerves is merely a talking point as bait for the average sucker.

Another feature that leads to permanent retention of patronage is frank integrity and unvarying principle. An intelligent patient wishes to feel confident that his doctor can be depended upon to treat him honestly, and when once a repute has been established for such dependability it will require quite a number of Christian Science fakirs, osteopathic hoodwinkers and a few old ignorant neighbor women with over-active tongues to break up his practice.

Another feature of paying value in the work of a general practitioner is useful equipment. I do not refer to huge X-ray outfits that awe the ignorant beholder, and this is their usual limit, or mysterious laboratory equipment that is never used except to catch dust, but to such things as an electric headlight for examining the throat, a good urinary analysis outfit, and a good sturdy automobile that will take you quickly to the urgent call.

These factors will serve as examples of what may and should be adopted by the average country physician in getting above the level of mediocrity into the atmosphere of success.

Smallpox.—Occasional outbreaks of this disease in unvaccinated communities show that its danger still exists and that it is likely to develop at any time when precautions are relaxed. H. W. Knight (J. A. M. A.) reports a series of 21 cases of smallpox in Bradford County, Penn., all of which developed from an unvaccinated man who went to Pennsylvania from North Dakota. None of these 21 victims have been vaccinated; and practically all of the unvaccinated persons exposed contracted the disease, whilst five children of school age who were also exposed, but who had been vaccinated on admission to the schools did not contract smallpox.

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THE NAVAL MEDICAL CORPS.

IN 1902 Dr. Presley M. Rixey became surgeon-general of the navy. He had remarkably developed the faculty of inspiring his subordinates with enthusiasm for their work, and of making the most of their capabilities. He strove ever to improve the *esprit du corps* of his arm of the service, to increase the pride of the naval surgeons, not only in their own calling and their own work, but also in the navy as a whole. Surgeon-General Rixey strove most assiduously to raise the standard of admission, to improve the naval medical schools and to secure increased pay for his associates (so that good and able men would be attracted to the service), to expand the surgeon's work not only as practitioner, but also in research fields. And in all these endeavors Dr. Rixey was remarkably successful. During his administration occurred the somewhat unfortunate controversy over the command of the hospital ship Relief, which was definitely settled by the decision that hospital ships should be commanded by members of the medical corps; that controversy seemed somewhat to obscure the great importance of building and attaching hospital ships to the fleet, which was in itself a tremendous stride in the progress of naval medicine. No matter how commodious and well appointed may be the sick bay of a battleship, it is not comparable as a place to treat the sick and wounded with a ship designed for and devoted exclusively to that end. Besides, under the conditions of modern warfare, the hospital ship will be immune from the enemy's fire; the importance of this step will be appreciated how great would be the relief of the fleet commander to know that his wounded have thus been removed from the zone of fire, and that he may go into action free of all anxiety concerning them.

Dr. Charles F. Stokes became surgeon-general on the retirement of Dr. Rixey in February, 1910; and the progress instituted by and made under his predecessor has been continued with increased impetus by Dr. Stokes, who is maintaining the ideals which have obtained for nearly a decade past.

Dr. Stokes believes that the navy is entitled to the best medical practice; and that the foremost aim of the navy surgeons should be the adaptation of his scientific and practical knowledge to the promotion of the highest state of efficiency in the fleet. Pursuing such ideals, and having the cordial and hearty support of the Secretary of the Navy, George von L. Meyer, Dr. Stokes, while holding all the ground gained by Dr. Rixey, has developed a sort of mechanico-medical prophylaxis. He has worked for better conditions in the fire room, to the end that the stokers may render better service with less physical strain; has studied turret conditions with a view to minimizing the evils of noxious gases, the preservation of the eyesight of gunners and the protection of ear drums from the concussion; has devised a method for the safe and expeditious transfer of wounded to the hospital ship without recourse to small boats, has considered the prolongation of the period of life sustenance during an unduly long submarine submersion, and the rescue of a submarine crew under such circumstances. Dr. Stokes and his associates have moreover studied the elimination of weak or treacherous nerves, by the greatest possible promotion of general health and hygiene, to the end that dangerous errors (especially in magazine and turret during trying periods of navigation) may be reduced to a minimum, and the battleship teamwork promoted. Thus, from the enlistment of the tar, and the admission of candidates to the Naval Academy, to retirement from service or the active list, every individual in the navy is under the constant supervision of the naval surgeon. Health is the prerequisite in the fighting man; and for the health of officers and enlisted men the naval surgeon is responsible.

Such are the ends to which Surgeon-General Stokes and his superb staff are working with unremitting energy and with unusual ability and devotion. The Naval Medical Corps is composed of men who rank high as physicians, men who have contributed their full share to scientific discovery, whose conception and practice of professional ethics and the right traditions are unexcelled. When by the fortunes of war and the fate of nations the United States has assumed some part of the white man's burden, our naval surgeons have shouldered their full share—and more. It is they who have comforted and healed the sick natives in the Philippines, in Porto Rico, in Samoa and in Guam; though for this they were not primarily engaged. They have established hospitals, taught hygiene and have studied the causes and the nature of tropical diseases. Fifteen excellent hospitals, each a model of cleanliness and of humane and scientific practice, are maintained by the naval medical corps in the United States. These are open technically

only to officers and enlisted men sick during their term of service. But at each of the great navy yards not only are thousands of male employes treated, but in many instances the wives and families, not of officers alone, but of enlisted men as well, receive medical attention. The surgeon of each vessel treats without charge the wives and families of the officers and crew when his ship is in its home port; thus are established such confidence and mutual regard as go far to maintain discipline, and help to promote such observance of sanitary requirements as are essential to the welfare of the fighting force. When medical service is needed there is no distinction between commissioned officer, petty officer or plain Jack Tar; when anyone, high or low, is suffering physically, the surgeon's care is as free as the air that is breathed. It is, moreover, he who has ever been and always will be the first to become intimate with the enemy's wounded. As was the case when kind and hospitable treatment was extended to the brave but unfortunate Admiral Cervera, the reports of the kindness of the naval medical corps which wounded enemies take back to their own land, have gone far to allay bitterness between the nations.

THE "INSTRUCTED" GIRL.

FOR several years past, educators and sociologists, including our own profession, have been giving much attention to the moral health of the community—which, it must be confessed, needs vigorous treatment of some kind. During the last few years, the trend of opinion has, in ever-increasing degree, been in the direction of instruction of the young of both sexes, in sexual matters. It is with considerable hesitation that we venture to question—and we wish the word *question* to be taken literally, not in the sense of *oppose*—whether this policy is wise. But, now is the time for a thorough consideration of the problem, before the theories of the more radical advocates of sex instruction, are put into practice on the broad scale demanded for them. If genital physiology and pathology are taught by pamphlets and lectures in secular and religious schools and in assemblies of girls and boys called for this purpose, and the theories of education should happen not to work out well in practice, the plan cannot be simply stopped. The information given will be handed down, in more or less distorted form, by young boys and girls to younger ones, and it will be a decade, at least, before the effects of the movement can be brought to a standstill.

The sexual problem is quite different for the two sexes. In making this statement, we do not wish to be interpreted as upholding moral laxity in males, but merely accepting social conditions as they have been from time immemorial, are and perhaps always will be. Any attempt to bring the two sexes to the same level—excepting, of course, by moral and religious precept and example—will, in our opinion, result in leveling downward, instead of upward.

Limiting our attention to girls, we are decidedly of the opinion that "a little wisdom is a dangerous thing." Sexual hygiene may be divided into three parts, the hygiene of the individual herself, as modified by the functions of the sex organs; solitary perversions of functional activity; the hygienic and prophylactic details of the intersexual relation.

As to the first, we believe that the young girl should be interested solely in menstrual hygiene and that lectures on pregnancy, lactation, the menopause, etc., are liable to arouse, on the one hand, untimely dread of marriage and reproduction, on the other a prurient anticipation of maturity. So far as menstruation is concerned, the normal girl requires only the instruction and discipline which any mother or older sister of common sense possesses and the abnormal girl, like any other sick person, needs careful, individual medical attention, not public lectures. A very practical argument on the conservative side is that, in order to insure instruction in time to prevent lack of care at the menstrual periods, it must begin at an age altogether too young for class or pamphlet measures.

As to solitary perversions, the same remark is applicable. Moreover, there is great danger of producing more harm than good by suggesting what may never before have occurred to the girl.

Instruction regarding intersexual relations, however flavored with moral platitudes, is objectionable, primarily because it teaches the details of vice and condemns vice on account of its penalties, not because of its fundamental immorality. There has been a great hue and cry about moving pictures teaching the young to steal and commit deeds of violence, although the majority of the films, in strict accordance with melodramatic conventions, show the perpetrator as the villain and depict his punishment. But if every film followed this precedent, the influence would still be evil because of the common, and easily obtained knowledge that not every theft or murder is detected. Similarly, however eloquent the lecture, however exaggerated the statements made as to the physical retribution of sexual sins, the interest in the subject aroused is liable to lead to inquiry of persons, who will not tell "good people's lies," but the blunt truth to the general effect that "There was a little girl who had a little curl and it hung right down on her forehead and when she was good she was very good indeed and when she was bad she was careful."

Including pregnancy, there are four distinct venereal diseases. Exclusive of very rare means of conveyance of microorganisms of three of these and the decidedly infrequent transmission of the spirochete pallida by kissing or even by ordinary modes of indirect contact, prophylaxis does not require sexual instruction in the

present sense of the word, but the most rudimentary conception of principles of decency and propriety. As to syphilis, how many physicians can detect, off hand, in ordinary social encounter, the average partially treated, latent case? We grant the wisdom of instructing, not only young girls but everyone else, that any kind of skin or scalp lesion, sore throat, etc., may be infectious. But, to place such instruction on a sexual basis would be highly injudicious and unjust to a multitude of sufferers from a great variety of affections which have nothing to do with infringement of the law of chastity.

We believe that the young girl should be taught to hold the marriage relation in the highest esteem and to consider any lover's caress as an act of infidelity to her future husband and to her own character. Here is the proper place to draw the line. The girl who, under proper guidance, is not willing to draw it here, cannot be trusted to draw it anywhere else. And the man who will not respect true virginity, of the mind as well as of the body, is a low-lived rascal. All things considered, we believe that the instructed girl has more to fear from herself, than has the innocent one. The former is like the man who knows just how many drinks he can take without becoming intoxicated, the latter like the man who does not take the first one. And we believe that she has more to fear from the opposite sex, for a quite analogous reason that the man who will not or cannot induce another to take the first drink may not have any scruples against nor find much difficulty in tempting another to pass the safety line in the use of alcohol.

A detail of the utmost importance in carrying out any scheme of lay instruction in technical matters, is to limit the execution to proper teachers. Not only accurate information, but tact, judgment and personal standing are required. Granting that the ideal of the instructed girl is correct, who shall instruct her and how shall the instruction be given? About a year ago, we called attention to a voluntary association of women physicians in a certain city, to give lectures on sexual and moral hygiene to working girls. Wide publicity was given to the movement in the daily press. While the newspaper was on our desk, we had a call from a physician from an entirely different part of the country. We asked his opinion of the project. When he came to the name of one of the volunteer teachers, he laughed, and told us a lengthy and interesting chapter of his life at a coeducational medical school. We had to admit that one teacher, at least, was abundantly competent to instruct, even in details of vice not common on this side of the Atlantic.

Tonic.—Tincture nux vomica and glycerin with extract of malt and a good peptonized food preparation.

THE THERAPEUTICS OF PRAYER.

PART of a recent sermon by a veritable man of God is thus reproduced: In studying the biography of any great man we are very likely to be impressed with the paucity of his deeds and sayings by comparison with the influence he has exerted upon his day and generation; we cannot. by a consideration of the former, reach any just estimate of that influence. In such study we eventually become impressed, not so much by what the great man in the given instance did, or what he said, but by what he was—his character. This is so of Washington, of Julius Cæsar, of Abraham Lincoln, of Richard Wagner, and many another. All men, great and small, do and say for the most part what their environment, what the conditions of their time, require of them; but if we are to discern the intrinsic secrets of the power they have wielded, we must study not so much their word and deeds, as their personal habits. Jesus Christ preached and healed the sick with altogether peculiar power; but it is probable that His tremendous influence upon mankind since His advent has been mainly by reason of His character. And to understand this we must study His personal habits. Conspicuous among these was that of prayer. Again and again, being sought in the intervals of His benign ministrations, His disciples found Him in prayer. In all my own ministry I have experienced nothing so fatiguing as an afternoon spent in sick calls; I confess this leaves me utterly exhausted, and only in prayer can I find refreshment of body and soul thereafter. I cannot sufficiently extol medical men, who are with the sick all day long, every day, and half way into the night. I wonder how they can do so; I marvel how they can endure the strain! The Archbishop of Salisbury, in a talk with medical students, advised them by way of relaxation from their duties, to cultivate poetry; I know a better pursuit than that; it is to cultivate the habit of prayer.

An episode of hospital service is here recalled. On the interne staff was a quiet young man who by reason of his religious tendencies was blithely nicknamed "Grandma." When a difficult case was to be seen some one would say: "Let's have grandma along; any way he can help some by chipping in a prayer." In due time grandma became a "House"; and late one night a woman was brought into his ward who must surely die, if not at once operated on. Grandma 'phoned at once to his Visiting in town; who returned answer that he could not come, and that his House must operate in his stead. The patient was speedily prepared, and, to reinforce the poor gaslight (electric lights had not yet been installed in that hospital), other internes and helpers stood about holding lanterns. In such Rembrantesque surroundings and with perhaps a dozen nurses as added spectators, all moved by the gravity of the case, Grandma, scalpel in hand, stood by the side of his patient, at the operating

table. It was a most impressive moment when he closed his eyes, his head bowed and his lips moving. Thus encouraged and fortified, he got at once to work; with his hand from first to last so sure, his eye so keen, and his brain so clear that he seemed quite transfigured. Thus did grandma do a piece of work that many a visiting might have envied. And when the last stitch was done, and the patient on her way to her ward, those fellow-internes saw a light—which possibly remained with them until they reached their own bedsides.

The indubitable trend of modern thought is monistic, the basic conception being of a cosmic oneness in which all phenomena, however diverse they may seem, are inter-related and inco-ordinated. It is from this viewpoint that we recall three papers, by the late Rev. Dr. W. R. Huntington, Dr. Lyman Abbott and Moncure Conway, D. D., on "The Nature of Prayer." The layman as to theology could not fail to have been impressed with an idea that suffused all these three papers, by clergymen each of a different Christian denomination: that prayer is helpful to the individual not as to granting specific personal requests; not that the essentially benignant laws of nature would be disturbed in any personal behalf; but that prayer is helpful in bringing him who prays into comfortable, restful and salutary relation with that First Cause known to human ken as The Almighty, Jehovah, "the power not ourselves which makes for righteousness," and so forth. (May we not presume here to interpret the term righteousness as meaning rightness, orderliness, consistent inter-relation, universal oneness.) It cannot but gratify the humanitarian who is not a clergyman to observe this departure from the theology of other eras; it is gratifying especially to the medical scientist by reason that this modern aspect of religious faith, as here expressed by eminent clergymen, is much in unison with scientific faith—faith in the constancy of the universe, in the invariability of its laws, and in that infinite and eternal energy which permeates the cosmos. One may indeed venture the hope that, of the age-long conflict between theology and science, which has oftentimes been so cruel, so virulent and so deadly, there remains to-day but a difference, not at all of ideas, but only of nomenclature. May it not be hoped that somewhere between those two camps, of metaphysics and of materialism, a single standard can be raised to which all may alike repair—the standard of the universality, the monism of all human experience. Could not then a therapeutics of prayer, comprehensible to all, be evolved. Assuredly the human being needs help from without; for, though a coefficient in the working out of his own destiny, he is, when unassisted, a pathetically helpless atom in the universal scheme. When such "world compellers" as Bismarck, Gladstone and Cromwell and the like have humbly acknowledged this need, surely lesser men may seek it as well as they, and without humiliation. Is it not that the various aspects of human nature—the physical, the intellectual, the volitional and the emotional—when they have been perturbed by the stresses of life, are brought by prayer back to their normal co-ordination and functioning; that the individual in prayer gets his relations to his environment readjusted, and finds himself restored to harmony with the eternal verities. Such, we submit, would be a reasonable conception of prayer which might well be advised and taught both in the pulpit and the clinic.

SCIENCE AND INCANTATIONS.

THE recent German bill against quackery was, it seems, buried in committee and given no opportunity to reach the Reichstag in full session. Its brief and melancholy history is "indicative of much," as Carlyle might have observed. The great Scotchman's dictum, that common sense is also an inspiration from the Almighty, would have had no appreciation in the proceedings over that bill. Those Reichstag committee meetings in which it was considered recall a day a decade ago when a similar bill, which also failed of passage, was introduced in Albany, N. Y., to the end that irregular practitioners should be compelled to take examinations after the manner required of those who become registered physicians. This Albany bill was aimed simply to compel those ambitious to treat the sick, to evidence adequate knowledge of the structure of the human body and of the processes by which human life is maintained; "healers" were to demonstrate their ability to differentiate one disease from another—in short, to satisfy the legal axiom that one designing to undertake any given duty must possess skill and knowledge for its successful discharge. Representatives of odd cults came to Albany in great numbers to oppose this bill. The committee room in which such hearings are usually held, was hopelessly inadequate to accommodate those who wished to be present; and the Assembly chamber was filled on this occasion. It is noteworthy, by the way, that probably not more than three physicians appeared in behalf of the measure.

Opinions, akin to those expressed in the Reichstag committee meetings this spring were forthcoming. A long-haired individual arose from a group of short-haired ladies and acquainted the audience with his ability to cure cows by the simple process of standing before them and meditating. Another declared that his treatment would be identical for a case of cerebral abscess, of hemorrhage, of smallpox, of fracture—incantation for all alike. Another assured the now bewildered legislators that there are clairvoyants who can see and describe persons at a great dis-

tance; "and if they can do this is it not natural to suppose that they can see the internal workings of the human body." That Albany meeting vividly recalled Poe's tale of how he had inadvertently happened into a maison-de-santé; and one of those three regulars present afterward observed that it reminded him of nothing in the world so much as one of Charcot's clinics on a magnified scale.

Both this Albany and the recent Berlin incidents, futile as they were, might yet convey a lesson to American legislative bodies. Many perplexities attending efforts to get salutary laws passed against quackery might be dissipated could the faith of science, we shall not say be substituted for, but be given at least equal consideration with any other kind of faith. The faith of science is rooted in reason, a faculty at least as God given as any other which humankind possesses—that faculty of sweet reasonableness which, far from being inimical to religion, is essentially fundamental in the normally religious nature. Religion, by the way, is not always faithfully interpreted in terms of theology. There were theological objectors to the German bill who held that the skeptical as to the efficiency of supernatural phenomena in the cure of disease, are so by reason of their lack of faith. It is rather because of the strength of *la foi scientifique,* faith in the uniformity and the consistency of nature's laws (which have never in all human experience been found violable), faith in the adequacy of ordinary human experience to understand nature and discern her laws —that one is skeptical regarding supernatural therapy, in which quackery finds its refuge. The scientific faith at least equals any other in reverence whilst it oftentimes exceeds any other in its divine capacity for wonderment over the magnitude, the eternity, and the design manifest in the universal scheme; the possessor of this faith finds the universe and its creator not nearly so much a riddle as do other men.

There are secrets in nature, declared some opponents of that Reichstag anti-quackery bill, which science thus far has been unable to explain. That is true; human science does not claim to be omniscient. But what new secrets in nature will be revealed will be discovered only through those inexorable laws by which science works, and has ever worked when it has been untrammeled. For the word science, which terrifies so many, means simply "knowing," and science has absolutely no other raison d'etre than to seek truth and to abide by what has been evolved. The laws of thought, in obedience to which science works, were as immutable for the first thinking creature as they are for us to-day. Pythagoras or Thales could no more conceive two and two to be five than can to-day any one outside an insane asylum. Every secret that has been wrested from nature has been discovered through the working of those laws which are based on observation by means of the senses, induction or deduction from these observations, and judgment after a review of all the related factors. Any conclusions that are reached by other processes than these are not valid; to credit them is unsafe; to adopt them is perilous in the last degree. The methods of science as here stated have from the beginning been enounced by every philosopher worthy the name, as absolutely the only criteria by which cosmic phenomena can be grasped and estimated.

Science does not believe it humanly possible to reach the absolute; the relative alone is within human ken. The laws of science are immutable, the order of cosmic facts is constant, the determinism of natural phenomena is invariable and universal. Science eschews metaphysics, which has ever been a fruitless form of philosophy so long as it has disregarded or contemned physical manifestations; pure metaphysics has ever been hollow and barren so long as it has concerned itself only with the supernatural. Science, recognizing its limitations, and acting accordingly, has gradually brought nature under the sway of man and his industry; science is useful, and has been the source of most human progress; science is beneficent in that, in those eras when its activities have been free, it has ever consistently worked for human happiness and well being—and has worked so oftentimes despite the deterrent and pernicious influence of men who, whilst vaunting to the skies their interest in their fellow-creatures, have so frequently and so grievously misguided them.

ANTOINISM.

AN ex-miner named Antoine has founded in Belgium a new religion, which is said to number 160,000 followers, and in which the element of psychic healing forms a conventionally essential part. Antoine, the "Good Father" or the "Parent One," as his adherents call him, is a man of 65, with flowing white locks and a patriarchal beard; his wife is "the Good Mother" in this sect. Antoine's home is at Temeppe-lez-Liege; hidden in a block of similar small houses, the prophet's dwelling is conspicuous only by the spire of his church, which adjoins it. For three years at least he has not left his house or garden. He is reputed a vegetarian, preparing his own food; he sleeps little, resting (it is said) only two hours during the night, the greater part of which he spends walking in his little garden, which has electric lights fitted up all around the walls; he never reads any-

thing and will not see newspaper men (wise prophet!); he confines his healing to ceremonies in the church, where the services are of the simplest description. A 9 a. m. the congregation assembles; and an "adept," the publisher of the sect's literature, takes his place at a desk under a raised platform. There is complete silence for half an hour, when the adept announces that operations will take place at certain hours on certain days, and that all who wish to be cured must have perfect faith. He then continues sitting absolutely still, not a muscle moving, and his watery eyes fixed straight before him in an unblinking stare. At the stroke of 10 every one rises, and the "Parent One" enters by a side door and slowly walks up the steps to the rostrum.

Wearing a black cassock, and with his gray hair falling over his shoulders, Antoine faces the congregation for a full minute without moving or uttering a sound. He then lifts his right hand toward them and holds it thus extended for another minute. And that is all! These two minutes make the service. The "Good Father" walks slowly out, and the adept observes: "Every one whose faith is strong enough must be cured"—whereupon the church empties silently. No collection is made; but subscriptions are taken for the maintenance of the church.

For six months Antoine is averred not to have spoken a word to any one. People have come at all hours, with all sorts of ailments and appeals. It seems he now effects his "cures" by deputy. His wife (or some other adept) stands in front of the applicant, and turning her eyes upward slowly waves her hand in the air, meaning thus to invoke Antoine "the Healer." The patient then departs, cured; or if not it is considered there has been a lack of faith. The badge of the sect is "the tree of the knowledge of the sight of evil," represented by a white tree on a black background.

One should not off-hand assume Antoine to be a charlatan. He seems to be very like Schlatter, who some twenty years ago, appeared in Albuquerque, New Mexico, and declared himself to be the Messiah, and that he could heal all bodily diseases and infirmities. But Schlatter seemed sincere, as seems also Antoine to-day. One may perhaps the better comprehend Antoine by a brief consideration of the career of Schlatter.

Francis Schlatter, a shoemaker, came to this country from Lorraine; he drifted out West, and led a roving life. At one time he lay in an Arkansas jail for six months, on a charge of vagrancy, and he behaved so well and was so much liked that, when his time was up, the authorities were loath to let him go. At Albuquerque he declared he had been twice called of God; and at each time had resisted. At the third call he obeyed, left his shoemaker's bench, went out into the mountains, bareheaded and barefooted, and fasted many days before returning to begin healing. At Denver, to which city he came in 1895, he received some two hundred thousand people in less than three months; these had all been attracted by the reports of his power to do medical miracles. He claimed that his power came direct from God. The laying on of his hands, the pressure of his hands, and his touch were the only means he employed. When the numbers became so great that he could not personally meet them all, he gave out that if the handkerchiefs of those who could not reach him or come to him were taken to him, he would bless these handkerchiefs; and that this would be as effectual as his personally touching the patients. He was a most powerful man physically; not large, he was wonderfully broad across the shoulders. Shaggy haired, blue eyed, he stood dressed in a leather wamus, such as butchers wear while at work. He invariably refused compensation; he never took money. "The Father will care for me"—and his statement was genuine and made in all sincerity.

Schlatter was not consciously a charlatan; undoubtedly he believed he had a God-appointed mission. He was obsessed, if you will; but in like manner with Peter the Hermit, or Joan of Arc. His powers were, of course exaggerated; stories of his cures were sure to be amplified and to multiply as they went abroad. Nor was there anything miraculous in the power he exhibited; but he was no doubt as much a victim of the delusion that such power was miraculous, as were those who believed in him. His "cures" would not surprise the student of psychotherapy. The characters of Antoine and Schlatter would seem to have much in common.

THE DRESDEN HYGIENE EXHIBITION.

THIS is called an international exhibition; and so it is except in one very important particular. Practically all the civilized peoples are represented—Germany (which of course has the largest exhibit), Great Britain, France, Austria-Hungary, Japan, Spain, Italy, Switzerland, China, Holland, Russia, Brazil. But these United States of ours are not represented; and we have lost a valuable opportunity to demonstrate to the world, in this greatest of health conservation congresses, that we are not behind other countries—that in many respects we are the leaders.

This Dresden exhibition is far more than its mere name would imply. The term hygiene is taken to cover everything connected with human well-being; beginning with human anatomy and physiology, it passes along

through man's food, his dwelling, his clothing, his mental and physical training, his sports—to the diseases to which he is subject and the means that are taken to combat these diseases. All these various phases of the central idea are treated with due respect to their historical development, so that the exhibition is really an object lesson of the course of civilization; what the Germans call Kulturgeschichte is most attractively and instructively presented.

The historical phase of the exhibit is so extensive as to form in itself a large section; in which one finds represented the manner in which each of the great nations of antiquity—Egypt, Babylon, Assyria, Judea, Greece and Rome, solved the problems of housing, what provisions they made for drainage for obtaining a suitable water supply, the hygienic methods in vogue when the world was young and the early endeavors of the healing art and of surgery to relieve human suffering.

By far the most important part of the exhibition is the section designated as Der Mensch—man himself. It is certain that never before has the complicated machinery of the human body, with its many ramifications, and the many-sided activity of man in bending his environment to his requirements and his desires, been illustrated on so magnificent and thorough a scale. The entire human constitution passes before one in review.

The bulky catalogue of 500 pages states that the main idea in arranging the great exhibition was to impress upon the average individual—the layman from the practitioner's point of view—the importance of assisting his body all he can whilst adding nothing to its arduous task. There are presented the questions of food and drink, of clothing and housing, of exercise and recreation, of work and sleep. The chemical processes involved in digestion are vividly portrayed; for those Germans besides being the most thorough people in the world, leave in their demonstrations little or nothing to the imagination. One sees elaborate diagrams of the actual food values of milk, eggs, meat and the various vegetables and fruits; and on the other hand presentations of the obnoxious character of most of the diets in which the genus homo indulges.

Our Lady Nicotine receives attention neither complimentary nor gallant. Her pernicious influence upon the opposite sex is illustrated by a stalk of wheat under a glass bowl growing normally; whilst, in an adjoining bowl the result is seen after only three puffs of a cigarette are blown on the wheat. Scarcely any part of the latter stalk appears healthy; little excrescences are seen and there is discoloration almost throughout.

A most horrible example is that of a drinker represented as taking a glass of beer and contemplating with pride sixty large kegs—the amount he puts into his body in thirty years if he takes three glasses a day; whilst the actual amount of the poisonous alcohol in the beer thus imbibed is represented by a huge cask labeled 1,000 litres. One sees a beautiful house and garden which thirty years abstention from devotion to Gambrinus would assure.

As to pathology, each disease has its special section. There are post-mortem specimens of abnormal livers, lungs, kidneys, brains, eyes, ears, arms, legs—and so on through the entire organism. But the other side of the picture is presented in a most gratifying way—we observe here the wonderful progress made by medical science and by surgery in the past half-century. Here we find the climax to which the remainder of the exhibition has tended—Hygieia triumphans! One sees the busts of Pettenkofer (the founder of modern hygiene), Lisher, Pasteur, Koch; the portraits of many others grouped around the walls; the large signs in each of the subsections of the hall—smallpox, diphtheria, hydrophobia, cholera, sleeping sickness, bubonic plague, tuberculosis, meningitis, tropic dysentery, scarlet fever—the landmarks in the triumphant course of the science and art of modern medicine.

Doctors as Big Game Hunters.—Great statesmen have not a monopoly in the hunting of big game; there are doctors not a few who are fully as proficient in this regard. Dr. Dunbar-Brunton, for example, is such a mighty Nimrod, having spent some years as a district medical officer in northeastern Rhodesia. The lions which roam the country stretching southward from Lake Mwern have from time immemorial been man eaters. Recently fifty-three men have been killed by them in one district. The natives cannot protect themselves, as they have no guns; and they run additional risks by reason of their carelessness. Not seldom will two or three men sitting in the open, and telling the old folk love stories, which they love dearly, be pounced upon and killed by a man-eater before they can turn their heads. Many a man stooping over his tobacco plant has been seized and carried off by a lion which has made its way stealthily through the village outskirts. It is moreover no wonder, observes Dr. Dunbar-Brunton, that the natives fear their chiefs; for the ferocity of the latter "has been beyond words to describe." The late Mwamba was a bloodthirsty monster. Determined to show his power over his tribe, and to punish them for the immoralities of which they are too often guilty, he put them to torture and death for the least offence. Fifty men and women were spiked on stakes, and as they did not die quickly enough were roasted in their last agonies by bonfires lighted close to them. Women who flirted had their noses, ears and lips cut off; and Dr. Dunbar-Brunton has seen many of these poor creatures. For stealing one hand was chopped off at the first offence, and the other hand at a second offence. Such a penal code was in operation up to the last decade.

BIBLIOGRAPHICAL

A Text-Book of Medical Chemistry and Toxicology. By James W. Holland, M. D., Professor of Medical Chemistry and Toxicology, Jefferson Medical College, Philadelphia. Third Revised Edition. Octavo of 655 pages, fully illustrated. Philadelphia and London, W. B. Saunders Company, 1911. Cloth, $3.00 net.

This work has been brought fully abreast with the most recent and approved research, and the bulk not increased.

It is one of the best of its class for the medical student, and furnishes reference for wider study. The text has been elucidated in its simplest form, in the interest of the beginner. We commend the book unqualifiedly for its purpose.

A Reference Handbook of Obstetric Nursing.—By W. Reynolds Wilson, M. D., Visiting Physician to the Philadelphia Lying-in Charity; Member of the American Pediatric Society. Second Revised Edition. 32mo of 256 pages, illustrated. Philadelphia and London, W. B. Saunders Company, 1911. Flexible leather, $1.25 net.

In preparing the second edition of this little book the appendix has been amplified, making it more available for reference. A new chapter on Precipitate Labor has been added. The text has been revised. It is a useful reference book.

Nursing in the Acute Infectious Fevers.—By George P. Paul, M. D., Visiting Physician to the Samaritan Hospital, Troy, N. Y. Second Revised Edition, 12mo of 246 pages, illustrated. Philadelphia and London, W. B. Saunders Company, 1911. Cloth, $1.00 net.

This book has been thoroughly revised, new material added, in fact making it almost a new work, so that it will be found much more useful.

The work has received a warm welcome from the medical as well as the nursing fraternity.

Collected Papers by the Staff of St. Mary's Hospital (Mayo Clinic) for 1910. Octavo of 633 pages, illustrated. Philadelphia and London, W. B. Saunders Company, 1911. Cloth, $5.50 net.

The second volume of these papers is presented without preface other than the statement that the authors have consented to have their various papers bound in book form whenever it seems desirable. This is done not only to preserve the material permanently, but to place it in a convenient form for ready reference. The text comprises papers on a great variety of subjects, especially upon the alimentary canal, genito-urinary organs, the ductless glands, etc.

It is a book well worth having.

The Treatment of Fractures, with Notes Upon a Few Common Dislocations. By Chas. L. Scudder, M. D., Surgeon to the Massachusetts General Hospital. Seventh Edition, Revised and Enlarged. Octavo volume of 708 pages, with 990 original illustrations. Philadelphia and London, W. B. Saunders Company, 1911. Polished buckram, $6.00 net; half morocco, $7.50 net.

This is another book which has become standard.

The present edition differs chiefly from its predecessors in containing those facts which have during the past three years been accepted as important in the treatment of bone injuries.

On account of the increasing interest in the operative treatment of fractures a chapter has been introduced dealing with this subject.

New material has been added upon many subjects and the work is most satisfactory.

The text is splendidly illustrated upon practical lines.

Dorland's American Illustrated Medical Dictionary.—A new and complete dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Medicine, Nursing, Biology and kindred branches; with new and elaborate tables. Sixth Revised Edition. Edited by W. A. Newman Dorland, M. D. Large octavo of 986 pages, with 323 illustrations, 119 in colors, containing over 7,000 more terms than the previous edition. Philadelphia and London, W. B. Saunders Company, 1911. Flexible leather, $4.50 net; indexed, $5.00 net.

The present edition is new throughout, the entire text has been reset, the pages are longer, some 7,000 new words added, and several new features introduced. The special features that have always made the book acceptable and which distinguish it from all similar works, have been retained.

There are hundreds of new words not defined in any other dictionary. It is a fully up to date book, to be unqualifiedly commended.

A Manual of the Practice of Medicine. The New (9th) Edition Revised. A Manual of the Practice of Medicine. By A. A. Stevens, A. M., M. D., Professor of Therapeutics and Clinical Medicine in the Woman's Medical College of Pennsylvania. Ninth Edition, Revised. 12mo of 573 pages, illustrated. Philadelphia and London, W. B. Saunders Company, 1911. Flexible leather, $2.50 net.

A work that has reached the ninth edition, has become standard, and we only need say that the text of the present edition has been thoroughly revised and augmented to date, and its elementary character has been maintained, so that it remains a book especially for students. It has our hearty commendation.

A Text-Book of the Practice of Medicine.—By James M. Anders, M. D., Ph. D., LL. D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia. Tenth Revised Edition. Octavo of 1,328 pages, fully illustrated. Philadelphia and London, W. B. Saunders Company, 1911. Cloth, $5.50 net; half morocco, $7.00 net.

This great work which has long since become standard, has been thoroughly revised and brought up to date, including the arrangement of the subject matter. Much new matter has been added and many new subjects discussed, including all the new methods of practice suggestive or otherwise.

The work is so well and favorably known to the profession that it is only necessary for us to announce a new edition brought to date, and that it contains so much not before given that it is worth while to possess it, in preference to any previous edition.

It is a pleasure to commend the work unqualifiedly.

A Text-Book of Physiology, for Medical Students and Physicians.—By William H. Howell, Ph. D., M. D., LL. D., Professor of Physiology, Johns Hopkins University, Baltimore. Fourth Edition, Revised. Octavo of 1,018 pages, fully illustrated. Philadelphia

and London, W. B. Saunders Company, 1911. Cloth, $4.00 net; half morocco, $5.50 net.

The author of this excellent text-book has kept in mind the importance of simplicity, lucidity and a judicious limitation of the material to be selected.

The best that a book of this character can hope to accomplish is to give as clear a view as possible of the tendencies of the time, and this has been done in the very best manner. It contains the live issues of the day in a way to be understood. It is written with a view that the subject is a growing one, and the student must be made to realize this fact.

Not only the student but the physician will be well satisfied with this work, provided a hand-book only is desired. There is none better for its purpose.

A Manual of Pathology.—By Guthrie McConnell, M. D., Professor of Pathology and Bacteriology, Temple University, Medical Dept. of Philadelphia. Second Revised Edition. 12mo of 531 pages, illustrated. Philadelphia and London, W. B. Saunders Company, 1911. Flexible leather, $2.50 net.

This is one of the best manuals of its class and has been well received. It gives in concrete form the essentials of pathology and does not attempt to give more! It is the A. B. C. of the subject—just what the student wants. The subject has been brought fully to date.

Dorland's American Pocket Medical Dictionary.—Edited by W. A. Newman Dorland, M. D., Editor "Dorland's American Illustrated Medical Dictionary." Seventh Edition. 12mo of 610 pages. Philadelphia and London, W. B. Saunders Company, 1911. Flexible leather, gold edges, $1.00 net; thumb indexed, $1.25 net.

This useful little book is becoming very popular with a wide circle of friends and has established a definite place. The revised, enlarged edition, contains hundreds of words not found in works of its class. Terms in nursing, dentistry and veterinary medicine are included and the present edition will prove to be of far wider usefulness than any previous edition.

Applied Anatomy and Oral Surgery for Dental Students.—By Robert H. Ivy, M.D., D.D.S., Assistant Oral Surgery to the Philadelphia General Hospital; Assistant Surgeon, University of Pennsylvania Hospital. 12mo of 280 pages, illustrated. Philadelphia and London, W. B. Saunders Company, 1911. Price, cloth, $1.50 net.

This is an attempt to place before the dental student in a few words the special anatomy and surgery he may require, and emphasize the subjects that require his particular attention.

The work can be depended upon and we commend it to our dental friends.

Lippincott's New Medical Dictionary.—A vocabulary of the terms used in Medicine, Dentistry, Veterinary Medicine and the Allied Sciences with their pronunciation, etymology and signification, including much collateral information of a descriptive and encyclopedic character. By Henry W. Catteli, A. M. (Laf.), M. D. (U. of P.), Editor of International Clinics, Fellow of the College of Physicians of Philadelphia, etc. Freely illustrated with figures in the text. Second edition, octavo, 1,108 pages. Price $5.00. Philadelphia and London, J. B. Lippincott Company, 1911.

This was the first medical dictionary to contain veterinary and medical terms and medical biographies; the first to use capitals and small letters, making it a first guide to capitalization. The first to indicate the B. N. A. terms and the drugs that are official in the Pharmacopeia. It contains a greater number of words and definitions than any other selling at the same price it is claimed, and it certainly gives the clearest possible definitions and a wonderful amount of information. What more can be asked for?

A System of Medicine.—By many Writers. Edited by Sir Clifford Allbutt, K. C. B., M. A., M. D., L L. D., etc. Regius Professor of Physic in the University of Cambridge, Fellow of Gonville and Caius College and Humphry Davy Rolleston M. A., M. D., F. R. C. P., Senior Physician St. George's Hospital, etc. Volume IX., Diseases of the Skin, general index. Octavo, 869 pages. Price $6. London and New York, Macmillan & Co., 1911.

This is the concluding volume of the second edition of this system of medicine and contains the "Diseases of the Skin," and a full index to the eleven volumes of the system.

The text is largely rewritten rather than revised, because of the many changes and the great number of additions. The articles have been furnished by "many writers," all of which are of the highest standing in their respective specialties, so that the material, one may be sure, is of the very highest and most reliable quality. The text has been edited by Drs. Allbutt and Rolleston, men to be depended upon for the best that can be had.

A Practical Handbook of the Diseases of the Ear for Senior Students and Practitioners. By William Milligan, M. D., Aurist and Laryngologist to the Royal Infirmary, Manchester, and Surgeon to the Ear Hospital, etc., and Wyatt Wingrave, M. D., Pathologist to the Central Throat and Ear Hospital, London, etc. With 293 illustrations and 6 colored plates. Octavo, 596 pages. Price $5.00. MacMillan & Co., Limited, London, 1911.

This work gives special attention to the value of the application of pathological data to accurate diagnosis and efficient treatment, and to the importance of co-operation between the practical surgeon and the clinical pathologist. The importance of the interdependence of aural and nasal lesions is also considered.

It is intended for advanced students, and for such it is of great value.

The Medical Epitome Series.—Anatomy. A manual for Students and Practitioners. By John Forsyth Little, M. D., Assistant Demonstrator of Anatomy Jefferson Medical College, Philadelphia. Second Edition, revised and enlarged. Illustrated with 75 engravings. 12mo, 491 pages. Lea & Febiger, Philadelphia and New York, 1911.

This book presents in a clear and concise manner more than the mere essentials of human anatomy. The subject of the cerebro-spinal axis is an important addition to the work.

The medical student must have a copy!

A Pocket Medical Dictionary giving the pronunciation and definition of the principal words used in medicine and the collateral sciences, including very complete tables of arteries, muscles, nerves, bacteria, bacilli, micrococci, spirilla and thermometric scales, and a new dose list of drugs and their preparations, in both the English and metric systems of weights and measures, based upon the English revision U. S. Phar-

macopeia, also a veterinary dose table. By George M. Gould, A. M., M. D., author of "The Illustrated Medical Dictionary," etc. Sixth Edition, revised and enlarged; 34,000 words; 32mo, 1,033 pages. Price $1.00. Philadelphia, P. Blakiston's Son & Co., 1911.

A most useful and convenient little book for the purpose indicated.

Scientific Mental Healing.—By H. Addington Bruce, author of "The Riddle of Personality," etc. 12mo, 258 pages. Price $1.50. Boston, Little, Brown & Co., 1911.

This volume is intended to provide the general reader with a brief account of the principles underlying scientific psychotherapy; and to afford some idea of the methods by which it is applied in the treatment of disease and also of the maladies to which it is applicable. Technical terms have been avoided, illustrative cases have been used in order to emphasize the fundamental differences between psychotherapy of the scientific type and the psychotherapy of "faith healing." It is an excellent manual to prescribe to the lay reader upon this subject.

Reason and Sentiment.—By Prof. Paul Dubois, of the University of Berne, Switzerland. Author of "The Psychic Treatment of Nervous Disorders," etc. 12mo, cloth, 50 cents net; by mail, 55 cents. Funk & Wagnalls Company, New York.

This is a charmingly written essay on the relative value of reason and sentiment in determining the moral side of the springs of everyday actions. It will be found especially helpful in formulating in the minds of parents, proper sentiments in training their children's intellectual life.

The Conquest of Nerves.—By J. W. Courtney, M.D. 12mo, 209 pages. Price $1.25. New York, The MacMillan Company, 1911.

The author of this little book has taken up the various phases of mental healing and shows how running through them there is a common principle, and that the benefits of this principle when properly applied may be obtained by all.

The work is not written from sectarian bias, but the choice is made by individualization with keen discernment. The book is well worth reading and it will be found to agree with the experience of most medical practitioners.

International Clinics.—A quarterly of illustrated clinical lectures and especially prepared original articles by leading members of the medical profession. Edited by Henry W. Cattell, A. M., M. D., Philadelphia. Volume III., twenty-first series. Philadelphia and London, J. B. Lippincott & Co., 1911. Price $2.00.

The contents embraces "some uses for some old drugs; the modern treatment of arterio-sclerosis; heart therapeutics and the individual patient," and a great variety of other valuable articles, including "The Successful Practice of Medicine," by Thomas F. Reilly, M. D., which is well worth the price of the book.

"THE EXAMPLE OF THE MEDICAL PROFESSION TO OTHER PROFESSIONS."

In reply to our editorial on the above subject, Dr. J. P. Root writes us that:

"Kansas City, Mo., besides doing many things neglected by other civic corporations, has under the control of the Public Welfare Board, a free legal bureau which takes care annually of hundreds of cases for the poor," of which we are glad to hear.

RETROSPECTIVE

Neoplasms Within the Skull: Their Early Diagnosis and Sole Treatment.

The treatment of intracranial tumors (Dr. Tom A. Williams in Am. Jour. of Medical Sciences) is at present in the same false position as was that of appendicitis fifteen years ago. At one time all cases and even now most of them die without receiving any real treatment, for the giving of potassium iodide is merely ritualistic. No case is recorded in which a postmorten has proved that a non-specific growth had been cured by drugs. As short of surgical removal, only death is to be expected, the term "expectant" applied to other treatment is a misnomer unless the expectancy refers to the patient's certain death. Temporary improvement, whether spontaneous or from narcotics or potassium iodide, does not justify postponement of the only real treatment. It would be as reasonable to postpone an appendectomy because of the comfort a victim might derive from opium.

Even in most of the cases which do come to operation, careful clinical investigation reveals an unequivocal history of intracranial disease, often of several years' duration. It is our duty to find out and enunciate the earliest signs which point to intracranial neoplasms, in order that we may bring to the patient, before he is hopelessly moribund or permanently damaged, that relief which can be obtained in only one way—surgical removal of the new growth.

This is my own firm opinion, but the words are a condensation of those of Sir Victor Horsley, delivered in October, 1910, to the German Society of Neurology at Berlin. I am the more impelled to quote them here because of the recalcitrance which I have encountered regarding my urgent advice to operate upon a number of cases about which I have been consulted in Washington. In no single instance has my advice been followed, and the patients have all died, with the exception of one seen only a few weeks ago, and of another of whom I have lost sight.

Before relating a few of these, it is good to emphasize the symptoms which should create suspicion of a cerebral tumor. True focal epilepsy is the most striking of these. Bravais-Jacksonian attacks are rarely due to other than local irritation. The diagnosis of epilepsy and the exhibition of bromides in such cases denotes an ignorance utterly unjustifiable at this day. Such a case should be at once examined by someone versed in neurological technique. By refined measures of diagnosis, signs may be elicited by which an interpretation can be made and a surgeon can then be called in at a time when a growth can be removed with certainty and without danger. The same remarks apply not only to focal epilepsy, but to any focal symptom at all. Thus, slowly progressive or recrudescent paralysis strongly indicates neoplasm, when granulomas are excluded. Slight losses of the attitude or muscle sense in one hand are similarly significant. So also is diminution of the other sensibilities. General or partial dystaxia or dysergia should always be investigated from this point of view. Slight differences or irritations of the special senses are the earliest symptoms of some cases. Aphasia of different types may be the first symptom. All these, in the early stages, have great focalizing

significance. But it is not sufficiently realized that certain forms of mental dullness, of amnesia, of emotionalism, and changes in character are of localizing import as regards the destructive or irritative effects of a tumor of the frontal lobe.

Now, when one of these symptoms is found and a neoplasm is suspected it has been the procedure to wait for signs of cerebral compression before resorting to operation. The absurdity of this antediluvian attitude should heed neither indication nor insistence; but that both are required is shown by my experience in Washington. An analogy will make it clear. Suppose that a surgeon before removing a diseased appendix were to wait for perforation, peritonitis and abscess formation; does any one suppose that the mortality from appendicitis operations would be negligible as at present? Would not such a diagnostician be a laughing stock? Again, if the removal of carcinomata of the breast was always delayed until glandular involvement assured the diagnosis, would not their fatality approach 100 per cent.? I doubt if the surgeon who awaited this kind of certainty of diagnosis would ever find a case to operate upon.

Now, the neoplasms found within the cranium are often benign, and none of them have the malignancy of mammary carcinoma. Moreover, many of them are diagnosticable, while very small, on account of the functional responsiveness of the tissue they invade. Hence, their operability, technical difficulties apart, should be more hopeful than that of cancer of the breast, bowel, or uterus. Again, the subarachnoid sac is a less delicate structure than is the peritoneum, and the brain is less easily traumatized than are some of the structures of the abdomen. Hence, the technical difficulties are largely mechanical, and, indeed, many of them are already overcome by the labors of Horsley, Krause, Cushing and others.

Hence, exploratory operations within the cranium are no more dangerous and no less justifiable than they are within the abdomen, always provided that sufficiently precise indications can be furnished the surgeon by the diagnostician. These are now available, and have been laid down by myself and others following such authorities as Bruns, Oppenheim, Duret, Horsley, Collier, Allan Starr, Mills, Spiller, Cushing, and others. It is only by their utilization that it is possible to detect an intracranial growth before an extensive destruction of tissue has occurred, and it is only then that an operation can be successful, in so far as complete restoration of function is concerned, and that is what should be aimed at by every physician. Even when the opportunity for intervention is too late to restore function, however, a proper operation can nearly always prolong or even save life.

The corollary of these propositions is that drug or expectant treatment is utterly unjustifiable; for the only eventuality to be expected from such measures is the patient's incapacity and death.

CASE I.—A woman, aged about fifty years, seen with Dr. Gerry Morgan, who suspected some cerebral trouble because of his failure to prevent recurrent vomiting. There had been severe headache, staggering gait and fainting spells. I found the woman in bed, somewhat dazed. Memory was much impaired, and she had to search for her words. There was no word deafness, nor aphasia, properly speaking, but incoherence had appeared now and then. I found a complete left lateral homonymous hemianopsia, but no contraction of the color fields other than this. The pupils reacted to light. There was marked edea of both optic papillæ. There was slight nystagmus on the lateral movement of the eyeballs. The attitude sense of the right hand was impaired. There was a right facial paresis, but no other motor loss. The gait was not cerebellar, and hardly uncertain. The plantar reflexes were in flexion. The Achilles reflexes were diminished, the right being almost absent. The right patella reflex was weaker than the left. The brachial reflexes were absent, as was the right abdominal reflex.

On account of the headaches, projectile vomiting, amnesia, difficulty of speech, and choking of the optic discs, I believed that there was a growth, and that it was in the right occipital temporal region on account of the left lateral homonymous hemianopsia. I advised operation, to be preceded by a few days' further observation and study to define the locality still more precisely. But the next day I was suddenly again called to the case. We found the woman curled upon the left side, stuporous and vomiting. On examination, the plantar reflex was now in extension. The pupils were more contracted, but reacted fairly well. There was no further modification of sensibility, as far as could be found. We had taken with us Dr. Wellington, realizing in advance the need for urgent operation. After consultation, we advised removal to hospital at once, and operation; but we did not decide whether to decompress in the subtemporal region or to uncover the seat of the growth. However, the decision was never needed, for the family summoned a former attendant, who in turn called in two other consultants, whom he well knew would discountenance trephining, and the patient was allowed to die, which she did shortly afterwards.

CASE II.—Referred for opinion and care by Dr. Carl Henning. Complains of feelings in the head "as if twisting around," for over three years. The vision has been much dimmed. She has had convulsions, which she cannot describe, severe frontal headaches, stiffness and pain at the top of neck behind; slight nausea, occasional dizziness. On examination, I found a commencing atrophy of the optic disk, with a swelling of about one dioptre. Great asthenia. An uncertain, staggering gait, not cerebellar in type. Great slowness of thought and speech, with incapacity to remember details clearly. No apraxia could be elicited. Rotation tests were negative; the deep reflexes were exaggerated, but plantar flexion was prompt and complete. The smell was defective in the left nostril, and the sound of the Weber tuning-fork test was lateralized to the left. No other sensory modifications could be ascertained.

Without observation or actual description of the convulsions, localization could not be precise; but that there is a growth present needs no argument, and that it is in a frontal lobe is to be presumed from the convulsions, obnubilation, the site of the headache, the staggering gait not of cerebellar type, the

negative rotation tests. The presumption that the growth is in the left frontal lobe would be rendered certain or not by the observation of one of the convulsions, and perhaps by a study of the nature of the amnesia.

The exploratory operation gives the certainty of great relief and the possibility of extirpation of this growth and cure of the patient. This was arranged for, but before it could be done the patient's husband wrote that she was under other care, and that he did not desire it; and she has passed from observation.

CASE III.—A woman, aged fifty-five years. The family physician relates that two or three years ago he diagnosticated "petit mal." During the attacks a cold sensation mounted the limbs of the left side, and she fainted. She had dizzy attacks, headaches, false reminiscences, left hemiparesis, and weakness of memory. A year ago a consultant took charge of the case. He informs me that the unconscious attack lasted only a few seconds, and was not followed by dulness; that the left-sided paresis became worse and better by turns; that expulsive vomiting had been recurring for some time; that she was disorientated and confused, and that the pulse rate varied markedly. No diagnosis had been made.

The relation of these signs itself points most strongly to intracranial neoplasm, and an exploratory operation would have been justifiable upon them alone.

Sensibility.—Upon examination I found an impairment of the attitude sense on the left arm and enlargement of the circles of Weber on both hands, forehead, and tongue. Hypaesthesia to cold on left lower leg and toes. No marked impairment of vision or restriction nor inversion of fields, and no edema of the optic papillæ. Sometimes she confessed to smelling a hop-like odor in the mornings. The deep reflexes were all exaggerated; the abdominal reflexes were absent, and the left plantar was incomplete.

Motility.—The motility was in general feeble, and her mental state prevented quantitative reliable tests. There was distinct facial asymmetry, the left side being weak. There was no strabismus, nor nystagmus nor inequality of pupils. The diadocokinesis was impaired, especially on the left side. The contralateral synergic response was diminished in the left lower limb. The attacks occur after a headache and a creeping numb feeling in the back of the neck, the arm, and leg, which lasts for a few days. No dyspraxia could be elicited.

Intelligence.—Mental hebetude was distinct. For example, she called a quarter a nickel, although she disproved asteriognosis by declaring that she felt the milling on the edge. She was much disorientated, not even knowing the date or recognizing people she well knew.

The findings in this case leave no doubt of some slow invasion of the right frontal lobe. Its nature can only be determined by exploration. An operation for the purpose would at the same time relieve the patient, even though an irremovable growth were revealed. I so advised; but it has not been done on account of the timorousness of the physicians in charge of the case, whose failure to make a diagnosis for two years is responsible for their own opposition to an operation now.

I could cite several other cases, but do not wish to prolong an argument which should be already so clear as to admit of no misunderstanding, and the conclusion of which I may restate as the imperative necessity of an early neurological examination of any patient complaining of vague intracranial discomfort, symptoms loosely called neurasthenic or hysterical; progressive weakness, clumsiness or dulling of sensibility in any part of the body; nausea and dizziness; dimness of vision not due to refractive errors, especially if evanescent; peculiar subjective sensations of taste and smell; mental dulness, loss of memory or change of disposition. It is only by this means that the surgeon will gain access at a period early enough for extirpation of an intracranial neoplasm.

Abdomino-Pelvic Pain in Women.—In a most valuable paper, V. Bonney (Practitioner, Aug., 1911), observes that the treatment of any condition the underlying causes of which are unknown, must be to a large extent empirical. In examining obscure cases of abdomino-pelvic pains there are these questions to which a reliable answer must be had:

1. Is the pain relieved on lying down?
2. Does it bear a definite relation to the menstrual epoch?
3. Is it influenced by the condition of the bowels?
4. Does it bear a relation to the taking of food?
5. In what period of the day is it most marked?

1. A pain that is relieved by recumbency bears some relation to the force of gravity. 2. If fluctuations of pain are related to those of the menstrual loss some connection with the genital organs is suggested. 3 and 4. The importance of the questions bearing on the relation borne to food intake and fecal evacuation are obvious. 5. As regards the period of the day when the pain is at its worst, it is obvious that symptoms worse during the night or early morning are probably not due to muscular or ligamentary fatigue. On the other hand, pains that are worse at the end of the day's work probably bear some relation. The patient must be carefully examined both in the lying and standing postures. We cannot properly estimate gravity displacements (such as retroversion, prolapse, "movable" kidney) except in the standing posture; the patient should be asked to indicate the point of greatest pain with her own hands. Should ordinary examination reveal nothing, and the case is urgent for relief, investigation with X-rays is indicated, lest an abnormality of the spine or of the sacro-liac joints exists, and in order to exclude the presence of renal, ureteric or vesical calculi, where the pain bears a definite relation to the action of the bowels or the intake of food the study of the passage of a bismuth meal by means of X-rays may help by removing an abnormal stasis in some intestinal section. If the bladder is under suspicion we must use the cystoscope, which can be done without an anesthetic, unless the patient is very nervous. In obscure cases we have to examine under anesthesia.

As to drugs: A number are serviceable in cases of pelvic pain without physical signs; the selection depends upon the peculiarities presented by the individual patient. Generally we must begin with a purgative; for many women go about with an habitually overloaded colon, although the bowels are open every day. The ordinary "white mixture" is excellent; later, when the colon is well emptied, the following is substituted:

℞ Ext. Cascara Sag. ℥i,
Magnes. Sulph. ℥i,
Tr. Hyoscyami ℥ss,
Aq. *ad* ℥i.
M. Sig. ℥ss-℥i at night.

Flatulence requires either

℞ Pot. Bicarb. gr.x.
Tr. Zingiber m.x.
Sp. Chloroform m.x.
Inf. Rhei m.xxx.
Inf. Gentian *ad* ℥i.
M. Sig. ℥i tid.

Or ℞ Ext. Aloes gr.i.
Ess. Menth. Pip. m.iii.
Tr. Capsici. m.v.
Aq. *aa* ℥i.
M. Sig. ℥i tid.

The following is excellent, especially if gastric symptoms accompany:

℞ Bismuth salicyl. gr.x.
Sodii Salicylat gr.x.
Sp. Chloroformi m.xv.
Aq. Menth. Pip. *ad* ℥i.
M. Sig. ℥i tid.

Where a sedative action on the female generative organs is desired, Bonney uses viburnum; or the "Liq. Sedans," or

℞ Ext. Aletris Liq. m.xv.
Tr. Bryoniæ m.x.
Pot. Bromid gr.x.
Aquæ q. s. *ad* ℥i.
M. Sig. One dose.

"Cotarnin, either as the pthallate (styptol) or the hydrochloride (stypticine) is useful for pains which bear some relation to periodicity in the menses." The use of the analgesics of the antitpyrin group is very limited in cases of chronic abdomino-pelvic pain; but they may be given at the heighth of exacerbations, if such occur. Aspirin is perhaps the most serviceable. Many sufferers are out of health generally, quite apart from their local complaints; such patients always find benefit from ferruginous tonics containing strychnine. The best results are obtained with the milder iron preparations, such as the ammoniated citrate of iron, because the digestion is usually too disordered to tolerate the more astringent forms.

℞ Ferri Ammon. cit. gr.x.
Liq. Strychnin, m.v.
Sp. Chloroformi. m.v.
Aquæ q.s. ad ℥i.
M. Sig. ℥i tid.

Another excellent formula is the Syrup Ferri Phosphati. The modern glycerophosphate preparations are very useful. Thin and debilitated patients should have their tonics supplemented by cod liver oil, malt extract, and the like. A glass or two of good port wine, or full bodied but not necessarily over-refined Burgundy, taken at meals, increases the appetite and is an adjunct to the medicinal tonics. For bladder pain, whether or not associated with cystitis or bacteriuria, no drugs can supplant citrate of potash and infusion of buchu. We may prescribe "buchu tea" or:

℞ Potass. citrat gr.xx.
Tr. Hyoscyami m.xxx.
Inf. Buchu q.s. ad ℥i.
M. S. ℥i tid.

Urotropin, salol or some other urinary antiseptic is indicated for bacterial infection of the genito-urinary tract.

As to counter-irritation: In certain of the forms of undiagnosable pelvic pain much improvement is achieved by liniments, but even more effectively by a blister in most cases. The cautery is indicated in obstinate cases of backache with a definite pain spot. "This good old-fashioned treatment is neglected too much nowadays. Massage is useful in two conditions: (1) where the pain is suspected of being due to weakness of the back muscles, and (2) in states of intestinal stasis associated with flatulence and relaxation of the abdominal parieties; it may also be used as an adjunct to other treatment when general muscular debility and ill-being complicates the leading symptom.

Mechanical supports give great benefit in many cases, especially where backache is emphasized. However, in some cases pressure over the pain spot will not be tolerated. Therefore, before ordering a mechanical appliance it is often wise to continue some temporary expedient to test the efficacy of pressure, such as a well-fitting, many-tailed binder, strips of adhesive plaster, or a small pad temporarily fixed on with the same. Abdominal belts are useful in ilio-pelvic pain associated with pendulous abdomen, but they require very careful planning so that the pressure shall be applied from below upwards. Better than a belt is a well-fitting, modern, straight-fronted corset carried low down over the pubes. To keep the lower part of the busks in close approximation with the abdominal wall small straps are fixed on either side and united by a buckle in the middle line. Another useful device in pendulous abdomen is a narrow belt of which a segment consists of a pneumatic pad, Where definite pain spot exists, over which the patient finds gentle pressure to give relief, a small pad (pneumatic or horse-hair) is either fastened to the inner surface of the belt or corset, or it is retained in position by a broad strip passing around the pelvis. The latter is especially useful for the pain centering in the sacro-iliac joint.

Bonney absolutely condemns the introduction of a pessary in the absence of physical signs of uterine or vaginal displacement. A pessary is most properly used as a splint—as a temporary appliance to support parts in a normal position until they will remain so of themselves. It is also occasionally employed like an orthopedic device to counteract permanently an incurable deformity. "But to insert a piece of india-rubber or vulcanite into a normal vagina and under a normal uterus for the cure of a pain which has no relation with either, is a method of treatment not differing much from the rheumatism rings and such like similar charms that have in all ages made appeal to the minds of the ill-educated and the vulgar."

Electro-therapeutics are chiefly indicated in cases with marked neurosis. Suggestion is no doubt the basis of its salutary action in many cases; in others electricity has the effect of a counter-irritant. Some forms of vesical pain are markedly relieved by it, but it is of first importance in contemplating this therapy, to exclude absolutely any organic lesion of the urinary tract.

Operative measures will play but a very small part in the treatment of abdomino-pelvic pains which are unaccompanied by any physical signs of definite disease —which is Bonney's present thesis. There is, indeed no

type of patient as this, for which it is generally so desirable to avoid surgery. Yet there are cases where an exploratory laparatomy is fully justified in view of the very fixed limitations of diagnosis that pertain to ordinary examinational methods. What are the justifying circumstances? (1) Where the pain has existed for a long time; (2) where it has defied every other method of treatment; (3) where it is a cause of serious disability; (4) where the patient, fully understanding its problematic chance of success, desires it. It may in general terms be stated that cases of ilio-pelvic pain are the most suitable and those of backache the least suitable, for surgical measures. The operation, in the first instance, will be an exploratory abdominal section; and it is possible the patient will be rewarded for her determination, and the surgeon for his advice, by the disclosure of some markedly abnormal pelvic condition that has gone undetected despite the most expert and conscientious examinations. An adherent appendage, a thin-walled lax ovarian cyst, fine, filamentous, or even universal "postage-stamp" adhesions, may be found. The appendix may be diseased, or the cecum or other part of the bowel adherent. The exploration must, of course, include the state of the gall-bladder, stomach or kidneys, for diseases of these parts must occasionally be the cause of pain referred to the pelvis. The finding of any such explanation of a persistent and peace-destroying pain gives the utmost satisfaction, but we must not build too much on the hope, for in most cases no gross lesion definitely explaining the symptoms will be exposed. A careful examination should then be made of the position of the ovaries, and of the condition of the ovarico-pelvic ligaments, and of the mesenterics of the sigmoid colon and cecum. A shortened condition of the left ovarico-pelvic segment is not uncommonly met with—and this may be responsible for chronic left ilio-pelvic pain. The mesenteric encroaches on the free suspension of the colon; and pseudo-mesenterics are found by adhesion in chronic intestinal stasis; such abnormalities, if found, must be rectified by ligature and division of the tethering part. A shortened ovarico-pelvic ligament should certainly be tucked by division and ligature, if ilio-pelvic pain is present, so as to set the ovary free of all possible bowel traction. Bonney quotes Gray, who attributed (Brit. Jour. Obstet. & Gynec., July, 1909), the good results to the division of the ovarian nerves contained in the ligament. A heavy and prolapsed ovary should be suspended by pleating the ovarico-pelvic ligament, an operation which may be combined with division of the ovarico-pelvic ligament. Bonney opposes removing a normal ovary for a so-called "ovarian" pain; apart from the sacrifice of a functioning gland the procedure often fails in its intent to relieve the pain, worse still is it to remove both ovaries. These patients would very badly endure the nervous symptoms a premature and artificial menopause.

The Prevention of Epidemics of Infantile Paralysis.—Dr. M. Allen Starr (Med. Record, Aug. 5, 1911) states that by an early diagnosis of this disease and by the prompt administration of urotropine, the severity of the symptoms may be lessened. The earliest symptoms so closely resemble those of other acute infections that there may be a doubt in the mind of the physician whether measles, scarlet fever or typhoid fever will develop. But it becomes imperative for the physician to disinfect the nose and throat frequently and to administer urotropine without waiting for positive symptoms because there is a possibility of aborting the disease by these methods. The dose of urotropine should be usually two grains every six hours for a child of two or three years of age; a dose of three grains for a child from six to ten years of age; and a dose of five grains for an adult. We must remember that if this remedy is used in the early stage there is a possibility that the subsequent development of a severe attack of anterior poliomyelitis may be avoided, and the extension of the disease to others may be prevented.

Crotalin Treatment of Epilepsy.—Dr. Ralph H. Spangler (N. Y. Med. Jour., Sept. 9, 1911) reports in tabulated form thirty-six cases treated with rattlesnake venom (crotalin). He is convinced that the treatment, if used with intelligence and a careful technique, is of great value in modifying the severity of the attacks, progressively lengthening the intervals between the seizures and produces a most desirable effect on the apprehensive mental state so characteristic of the unfortunate sufferer from epilepsy. The form of epilepsy most influenced by the venom is the so-called idiopathic or genuine epilepsy, for which there is no ascertainable cause.

The general health in all cases improved noticeably. The thirty-six cases tabulated have been under observation and treatment long enough to show the undoubted beneficial influence. A brief summary showing the variety of cases tabulated is interesting. The ages of the patients ranged from five to sixty-two years. They include twenty-one males and fifteen females, who had been subjected to epileptic seizures for periods varying from six months to twenty-five years before the venom treatment was started. Included in the thirty-six cases are twenty-four patients who were subject to only major attacks, grand mal; eleven who were subject to both major and minor attacks, and one in whom only the petit-mal form was present. In nine out of the thirty-six cases the convulsions occurred in series. A family history of epilepsy was present in nine of these cases; alcoholism in four; insanity in three, and in the remaining twenty cases of the series the family history was negative, so far as hereditary influences are usually considered. It is interesting to note in the previous personal history of the cases possible factors which may have had a predisposing ætiological influence. Four cases were preceded by convulsions in infancy, two by chorea, three by scarlet fever and in one case epileptic attacks developed while the eruption of measles was present. Two cases followed attacks of typhoid fever, and one case followed a heat prostration. There was a history of a fall in four of the cases, and of a severe fright in three. Menstrual irregularity was associated with the convulsions in four patients out of the series. In the remaining thirteen cases nothing of interest or importance could be elicited in regard to the previous history of the patient. The most satisfactory solution consists of the dried, crystalline scales, from the venom of Crotalus horridus, dissolved in sterile water, to which has been added a few drops of trikresol for its preservative and antiseptic effect. This sterile, antiseptic solution is put in sterilized ampoules, holding one cubic centimetre each and sealed. Each ampoule containes one dose, which is made as strong as desired by the physician, i. e., each one cubic centimetre of solution represents 1-200, 1-100, 1-75 of a grain of the venom. It is best to start with a dose of 1-200 grain and gradu-

ally increase the strength as indicated. The idiosyncrasy is judged by the local reaction at the site of the injection and the effect it has on the character and frequency of the convulsions. The value of the treatment bears a direct relation to the presence of a satisfactory local reaction which consists of swelling, erythema and cellulitis. The author has had several cases that required 1-25 grain before sufficient local disturbance was obtained favorably to influence the attacks. The site of injection usually chosen is the forearm, alternately from left to right.

It is best to use an all-glass aseptic hypodermic syringe and a platino-iridium needle about one and a half inches in length. The needle should be well introduced into the muscles (intramuscular) at an angle of about sixty degrees and the contents of the syringe expelled slowly.

The frequency of administration varies with the character of the attacks in an individual and depends upon the length of time the local reaction lasts. It seems best to wait about two days after the swelling and cellulitis have subsided before giving another injection. It is best to withdraw all other medication and allow a general mixed diet, only instructing the patient to avoid such articles of food as were found to produce gastro-intestinal disturbance.

Acute Tonsillitis.—In considering the prophylaxis and treatment, Schönemann (Practitioner, Aug., 1911), holds that the tonsils represent lymphatic glands of the neck, draining the pharyngeal mucous membrane. The normal function of the tonsils is the same as that of all lymphatic glands. Tonsillitis is, therefore, nothing more than an inflammation set up by infection brought by the lymphatics. Infection of the tonsils by way of the surface is very rare; the origin of the lymphatic vessels which end in the tonsils is to be found in the nasal mucous membrane. And it is possible that every cold in the nose may set up tonsillitis, although such need not necessarily occur. Upon such bases Schönemann has now discontinued all local treatment of inflamed tonsils. Instead he gives plenty of salicylate internally—gr. xlv of asperin in a quarter of an hour, with a large quantity of tea in order to promote sweating. The interior of the nose must be examined, and if any hypertophy is found, all such must be removed surgically—not by electric cautery. For disinfection of the nasal mucosa, Schönemann instills a 2 per cent. callargol solution.

Neuralgia Ingelraus (J. de Med. et de Chir. pratiques), uses largely methyl salicylate. From 50 to 100 drops upon gauze, and covered with oiled silk should be applied and renewed twice in 24 hours. Or this liniment

℞ Methyl salicylate,
Chloroformi,
Tr. Opii, *aa* ℥i,
Bals. Tranquilli ℥iss,
M. Fl. Liniment.

Or ℞ Olei Terebinth,
Chloroformi,
Balsam Fioraventi *aa* ℥i.
M. Fl. Liniment.

Mesotan does not possess the penetrating smell of methyl salicylate; it may be used by itself or mixed with olive oil, aapa. We may use menthol as follows:

℞ Chloral hydrate,
Camphor,
Menthol *aa* ℥iv.
M. Fl. Pigmentum. S. Apply with a brush.

Or ℞ Menthol,
Guiaicol *aa* ℥i,
Alcohol absolute ℥ii.
M. Fl. Pigmentum.

Belladonna and mercury ointment will occasionally be useful, as:

℞ Ext. belladonna ℥i,
Ungt. Hydrargyri ℥iss.
M. Fl. Ungt.

A glycerole of belladonna, by mixing 1 part of the extract with ten of glycerole of starch, is made use of in some cases. Or,

℞ Extract Bellad. ℥i,
Tr. Opii ℥iss,
Ol. Hyoscyami, *aa* ℥iii.
M. Fl. Ungt.

Urethral Stricture.—S. G. Zinke (Jour. Kans. Med. Soc., Jan., 1911), emphasizes the following points in the treatment: Alkalies and rest are always serviceable, especially if complications are present. Uncomplicated, non-resilient and not too highly irritable strictures are best treated by dilation, up to 20 F., with flexible instruments; above 20 F. with metal sounds. Urotropin before, asepsis during, and either silver nitrate or permanganate after sounding are indicated. Dilation is rarely necessary beyond the calibre of the normal meatus. If stricture persists, try thiosinamine. If the patient does not want to waste time or if there are complications, cut (in very tight strictures). Do internal urethrotomy for strictures in the pendulous portion, external or combined for perineal strictures. Anterior strictures are commonly curable, posterior ones commonly incurable. Impassable strictures, without retention, are usually amenable to treatment, but if finally we find them impervious we must perform urethrotomy. Retention not relieved by the catheter requires hot baths or hot sitz baths—the hotter the better. Baths failing we must do aspiration or urethrotomy, preferably the former. Traumatic strictures are preventable by prompt treatment at the time of receipt of the injury; later we do urethrotomy. We excise for resilient or nodular strictures. Irritable strictures seldom require incision. Acute inflammation complications usually call for operative interference. Never cut unless dilation fails. *Use no force* in the manipulation of metal instruments, and little or none with flexible ones.

Hydrophobia Through Foxes.—The British Government adopts the extremest methods against dogs with the object of stamping out rabies, the result being that the disease is perhaps rarer in the United Kingdom than anywhere else in civilization, except, perhaps, in Germany. Yet in England the foxes are left at liberty; and these are, it seems, much more dangerous as regards hydrophobia than dogs. It is said that there is nothing so poisonous as the bite of a fox, whether wild or tame, and that in almost every instance this bite develops rabies. The odd status in England is that foxes are strictly preserved for hunting purposes, whereas any one may kill a dog whose bite is feared may inoculate the rabies virus, a man who shoots a fox is regarded with all the horror that a criminal is, despite the general knowledge that its bite will certainly produce rabies. "Vulpicide," on the Tight Little Island, when committed otherwise than in the hunt at the end of a long run, "is looked upon as an offense entailing the most drastic kind of social ostracism, and as on a par with cheating at cards and welching."

MISCELLANY

Mammary Carcinoma and Corsets Worn High.—What relation to the incidence of mammary cancer may exist in connection with the irritation of high corsets or corset stays? These impinge upon the lower surface of the mamma and undoubtedly are true mechanical irritants at the site of most frequent cancer-growth occurrence.

Nitrites.—"Study the nitrites," said Professor Pepper.

All recent blood-vascular work, done by such men as Hastings, Cabot, Huchard, only accentuates the importance of remedies directed toward blood pressure.

Iodides.—The effect of the iodides upon connective tissue and upon the cutis vera is to be studied. What is the chemic and the mechanical formula of the process of resorption?

Fever in Children.—What is the cause of the pyrexia in children proving so much more than relatively high? We are dealing with factors of pulse rate, faster in the young, and with the reaction to toxins. The study of response to vaso-dilators in relation to the facilitation of toxin elimination is important.

Bone and Blood.—What is the relation of calcification of arteries and the laying down of osseous centers? The relation of Haversian systems on one hand, and Malpighian systems on the other, is to the point.

Nervine.—Camphor water and the ammoniated elixir of Valerian, together with a bromid and essence of pepsin.

Sea Bathing.—Dr. Copernau advises (The Practitioner): The best time to bathe is two hours after breakfast—the period of greatest vital activity. Bathing must be avoided after a full meal. During the process of digestion the vessels are already engorged with blood; and the shock of the cold water may induce a dangerous congestion, the least of many penalties that may accrue being an acute indigestion. Many keen bathers go in for a dip before breakfast; but business men (on vacation after months of unremitting toil) those below par, those getting on in years, should not bathe at this time. Even the most robust should take a cup of hot milk before leaving the house for the sea bath.

Uterine Carcinoma is, like all cancer forms, an insidious disease, observes E. E. Montgomery (Penn. Med. Jour., Aug., 1911). Its advent is not discovered sufficiently early by the symptoms which are usually considered as indicating it. The practitioner should therefore be on the alert for signs which will denote its appearance much earlier than those on which we have been accustomed to depend.

Vaccines.—To what extent can vaccines supplant usual therapy? In acne vulgaris and certain chronic suppurative processes, in pneumonia, in typhoid, and in endocarditis there is strong probability of vaccine treatment supplanting medical methods.

Assimilative Index.—What amount is eaten is not equivalent to the assimilative index. Large eaters may have small assimilative indices.

Graves Disease.—R. Saundsby (Med. Rec.) considers rest the first essential; with this should be combined fresh air and a diet containing only a small amount of animal protein—abundant simple food, with plenty of milk and eggs—but no alcohol, tea, coffee or cocoa. "Surgery in the treatment of this disease has still to gain the confidence of the medical profession."

Santonin and Castor Oil should not be given together; the oil, being a solvent for santonin, increases its absorbability and hence the poisonous systemic effects.

The Foot as Thermometer.—Kocks (Berl. Klin. Woch, June 19, 1911) notes a method of taking temperature which obtained in the middle ages, and long before the invention of the thermometer. The nurse placed one or both of her own feet in the bath before and possibly also during the bathing of the new-born infant. A woman stood close by with a vessel of hot water, waiting to hear from the nurse, whether the temperature of the bath was as it should be.

Colds. S. F. Snow (Buffalo Med. Jour., Aug. 1911) gives a medium dose of castor oil or salines between doses of calomel, if the auto-intoxication is persistent or active, and calomel has been used, in order to prevent the cumulative effect of the mercury. A pill of blue mass, colocynth compound, strychnine sulphate and belladonna has served Snow well and does not tend to a constipation habit.

Pellagra and sprue are both afebrile diseases; with emaciation, loss of weight and general malnutrition as later manifestations, states J. Burnet (Med. Press and Circular, Aug. 9, 1911). The most striking fact, however, is that cases of pellagra may not show any skin lesions for a long time, but only persistent and chronic diarrhoea closely simulating that of sprue. Burnet believes the two diseases are identical.

Drink is the Effect and Not the Cause of Insanity, in the opinion of Dr. Gemmel, expressed in his annual report as medical superintendent of the county asylum at Whittingham, England. Intemperance is a prevailing symptom of incipient insanity. Inquiry into the history of those who, before committing a crime, or before an attack of insanity, had been drinking, showed that in many instances there was an inherited, unstable nervous organism, which had low restrictive power to alcohol. It would be unfair to consider these criminals or degenerates as deliberate drunkards, and assert that their insanity was due to drinking.

"Don't Box a Naughty Child's Ears."—"Don't allow any provocation to tempt you to strike a child on the head. Such are injunctions contained in an article on skulls issued by the International Hygiene Exhibition at Dresden. Corporal punishment of any kind is held to be wrong; but when the head is the point of contact between the angry parent and the child the former may easily become a homicide. In a collection of skulls at the exposition, by the Würzburg University, there are many of children as well as adults which show that the abnormally thin skull is not unusual, even in otherwise normal human beings, and the causes of death, which are stated on cards attached to the skulls, are intended to serve as warnings to parents, teachers and guardians.

To Study Trypanosomiasis.—Dr. Wm. B. Wolbach, assistant professor of bacteriology at the Harvard Medical School, has gone to West Africa to study the sleeping sickness and allied diseases; he is accompanied by Dr. J. L. Todd of the medical department of McGill University. The two physicians have a single white hunter for escort.

THE PSYCHOLOGY OF GRAVE EPIDEMICS.

By JOHN B. HUBER, A. M., M. D.

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IT was noted in this JOURNAL how in January last the plague pervaded some parts of China, and how the Chinese New Year, which falls on January 30th, was as usual and despite the plague, celebrated with all the accustomed vim. The town of Fu Chia Dien, for example, looked on that day most desolate in the cold and lowering weather; and it was as plague stricken as any region in Manchuria. Yet business was conducted as ordinarily—by those still alive; and the stroller "viewing the manners of the town," would hardly realize from the superficial aspect of things, that a dreadful scourge was gradually but surely destroying its people. Yet the plague had, from November last up to this New Year's Day, done for one-fourth of the twenty thousand inhabitants of that community; and it was then expected that more than half the remainder would be doomed before the plague would expend its energies.

On this festive New Year's Day in that Manchurian town, the mounted policeman's horse had its tail brightly decorated with green and red streamers; a shopkeeper burst merrily out upon a group in the street, scaring them with a bunch of firecrackers which he flung up into the air. A green house was decorated with bright red, gilt lettered posters, festive banners and green paper flags, all by way of celebration. Next door the yellow poster of the Sanitary Bureau was in evidence, sealing up that house, and marking it unclean; "eight dead, two dying," are the tally with which it began the New Year.

Policemen were put on guard outside suspected homes; but the day being cold, despite most positive orders and warnings to the contrary, they went within, where it was warm and so put themselves in jeopardy of the plague. The carters that loaded the dead on the wagons and took them away would not walk, but sat companionably beside the corpses. Suspects were taken to quarantine for a five days' surveillance; one among them started back for his cap, his head being cold. "Wear mine instead," offered an obliging coolie attendant, and immediately handed over his headgear, which was like as not returned to him containing infection-bearing fleas. A suspect house (really a plague death house, since so many died in it) had for its only attendant a cook. Being given a covering for his face, with a carbolized lint sieve to breathe through, he wore his mask suspended from his neck beneath his chin.

There was a superb old hero—in that he was devotedly and fearlessly doing his best according to his lights—an old-style Chinese doctor, whose system was chiefly to stick needles into his patients. Ever since the epidemic began he defied death and the plague; the dying came and the dead were carted out from the segregation house in which he has posted himself; he went around from k'ang to k'ang, sticking his pins in the sick and administering his heroic, ponderous doses. And all this he persisted in most faithfully, despite the humiliation of losing every patient he treated. A most noble courage here; no thought of fear; no quitter this; the hat should certainly have been removed in his presence!

Coffins were stacked before carpenters' shops on the main street; they were rough and thin, not the usual sort that have a weight requiring from eight to a score of men to carry one of them. Chinese custom has from time immemorial decreed that every one should have a coffin when he dies—even the homeless beggar; but in this stress coffins were now dispensed with in Fu Chia Dien. Nine hundred were buried coffinless in pits; above two thousand frozen corpses, in a most desolate stillness, awaited burial near the town, in a heap a quarter-mile long. Some coffins were in evidence, standing upright, without covers, the bodies erect in them; here an arm stuck upright out of its receptacle; there a naked leg protruded. Near the pile of which he was soon to become a member, was seen an outcast kneeling, worshipping, half falling in his weakness, as he bowed his head and rose again, before the grave of an ancestor.

It was said bodies had been thrown in the river; but this is probably not so, since the Zingari is in the winter season thickly covered with ice. It was after all, much simpler to get rid of a body by slipping it into a vacant lot, thereby escaping detection and arrest. Fortunately authority was received by Dr. Wu Lien De, who was in charge of the sanitary force, or Anti-Plague Committee (and whose strength and abilities were tested to the utmost in this epidemic), to burn all the dead. This was a very considerable yielding on the part of the people, meaning as it did a revolution in some of their most antiquated and cherished ideas. Ordinarily they would abhor the thought of destroying the bodies of their own relatives, probably of their parents; even some of the younger, foreign-trained Chinese physicians shuddered when they heard the proposal. Any practice in connection with the dead, and with ancestors, has through countless generations been sacred in China; only such a catastrophe as this epidemic could bring a change. Another old custom, it seems, was abandoned. Few among those dead had pigtails; such (stated *Collier's*) at the time had been sold in European and American markets for Western ornamentation.

As regards the city of Harbin, there really appeared to be some possibility of danger to other nations, which seems happily to have been averted; 2,500 Chinese had fled from that city, many of them no doubt carrying the plague. By reason of deaths among the Chinese employees of the Harbin mills infection might be carried to the foodstuffs exported to Amur and the Maritime provinces. Chinese and European physicians were beaten by the soldiers in the streets of Fudiziadion, from which city refugees had infected other communities. At Vladivostok, then ice free, the Chinese were polluting the Zingari by throwing into it the bodies of their dead of the plague. Japan and Russia were being jeopardized, though no Occidental community need have feared this infection.

To revert to the holiday festivities in Fu Chia Dien: A group of carters standing on a corner had just taken away a number of bodies and were now resting; they were joking. "It's your turn now," declared one; "No," laugh the others, "it will be you first." They had reached the bravado stage.

Nevertheless a great terror seized upon that town. It was not to be observed in passing through the gaily decorated main street; but one noted it in passing through the side streets and crooked alleys, especially after nightfall. Quite as during the Mediaeval Black Death

(as we shall see) brother was beginning to stand against brother, father against son; the plague was coming to its most dreadful stage, for it was now destroying the family affections. Such does not obtain in the beginning of these calamities; they supervene later, when by reason of the dreadful stress and strain the mind becomes abnormalized, the psychism disintegrated, the will paraperverted, hereditary morality subverted, the will paralyzed; and with all this, physical stamina at its lowest ebb.

Thus the plague fastened upon one member of a household; for five days no one observed this and all was well; suddenly came the chill, the furiant temperature, the vomiting of blood. The terrorized family ejected the sick man into the street; they should not wait to be arrested and held as suspects. The outcast then looked for the plague cart to take him to the hospital, whence but one in a hundred came out alive; or he staggered about, starved, and perhaps froze to death before the plague could claim its triumph.

Thus, most gruesomely, does the twentieth century repeat the fourteenth. So as to England, Warburton wrote, the terror of the plague was everywhere, inviting death; men's vital powers were so depressed by anticipation that they were already half dead before they were attacked; the parched throat, the pulse quickened by anxiety, were taken for fatal symptoms. Next to the fear of death was that of desertion. Men and women dreaded to look into each other's faces lest the "muddy glistening" of the eye should betray them, lest their feverish fingers be detected feeling under the armpit for the little hard kernel, no bigger than a pea, which moved with the touch—the sure precursor (so it was thought) of a doom inevitable, inexorable and respecting neither person, nor age nor conditions of life. To imaginations morbid through terror the pestilence seemed to lurk in everything—in every morsel eaten, in every ray that fluttered in the wind. Who, then, would be so foolhardy as to throw good life after bad, by nursing a dying friend, when the Black Death lay perchance in his last sign, in the farewell pressure of his hand. So the nearest and dearest ties were dissolved, the calls of kindred and humanity neglected; the sick left to die and to be carted to the grave by hirelings; numbers were driven, by reasonless terror away from human habitations, and perished miserably in the solitude of the fields.

Manzoni recorded as to the Continent some remarkable cases of virtue in public calamities, and in the long continued disturbance of settled habits; for example, the Sisters of Charity in Paris astonished all by their fearless and devoted attention to the sick, when more than five hundred were dying daily at the Hotel Dieu; though their ranks were again and again decimated, their places were always most readily filled up with volunteers. "But an augmentation of crime is far more general." On the whole the plague "instead of turning men over to God, turned them to despair in all parts of the world. Manners were dissolute; people became more avaricious and grasping, even when they possessed more of this world's goods than before." They were constantly vexing themselves and others with quarrels, and lawsuits; charity grew cold; and wickedness, with its attending ignorance was rampant. Evildoers were all the more active by reason of the immunity from punishment which the disorders of the times gave them. There was an unstringing of the consciousness of the survivors; outbreaks of profligacy were widespread.

Many writers—Gibbon, Creighton, Hecker, Haeser, De Chauliac, Petrarch, Michaud, Gasquet, Gowen—agree in their accounts of the dissolute manners which obtained toward the end of the Black Death. Boccaccio attests vividly how the human organism in all its phases—physical, spiritual, moral, intellectual—deteriorated in stamina and in co-ordination. Compassion, courage and the nobler feelings were found in but few; whilst cowardice, selfishness and ill-will, with the baser passions in their train asserted their supremacy. In place of virtue, which had been driven from the earth, wickedness everywhere reared its rebellious standard and succeeding generations were consigned to her baneful tyranny."

There was great moral degeneration. Parents and children deserted one another; there was thievery and murder; sick and suspects were killed, or they were abandoned by their families; mothers would not carry assistance to their dying sons; the husband dared not approach the dearest object of his affections, "who requests from him a drop of water in a voice most tender and supplicating." Famine also, rendered every man an enemy of his fellows; all alike were insensible to pity, shame and remorse.

From Italy to England the Black Death "seemed to arise the worst passions of the human heart, and to dull the spiritual sense of the soul." Who would think, declared Papon, "that in the midst of horrors so suitable (it would seem) for extinguishing the passions, there were two—libertinism and greed—which should be carried to so high a degree!" In Genoa, amid so many dreadful fears, amidst so many fetid and putrifying bodies, amid the shrieks, the sighs and the groans of the sick, what would you have expected—that people struck with dread and horror would remain sad, modest and quiet? But not so. They sang, played on instruments, danced—Genoa was never so shameless and disorderly. Many marriages were celebrated in the lazarettoes; many women, without shedding a tear for their husbands, immediately entered upon new engagements. One woman was married five times in one day—four of the bridegrooms having been buriers of the dead, dressed in the clothes they had stripped from the bodies of the deceased." Bulwer wrote: "The fiery pestilence was like a demon loosed from the abyss, to shiver into atoms all that binds the world to virtue and to law. Eat, drink and be merry, for to-morrow we die—such was the motto almost universally lived up to. The Middle Ages were naturally the era of superstitions, which were almost equally indulged in by the lowly and the intellectual, but such devitalizing force as the Black Death intensified this phase of the general racial psychology of those times.

A superstition most dreadful in its results was that which involved the Jews. It was believed in those days that the plague was disseminated by means of poisonous powders or unctions, which were made from spiders, toads, bats and owls; and that the wells and springs were thus polluted. The idea took most potent root (of course it has not obtained in the recent Manchurian epidemic) that all the Jews were banded together to spread the plague and thus destroy the Christians. Sober observation might easily have refuted this

accusation; but it is precisely in such circumstances that observation and reflection have no part. The panic caused by this belief is said to have seized upon all nations; in Germany, especially, it resulted in the wells and springs being built over so that the water could not be used; thus were whole towns forced to use river water or rain water. In Germany all classes made a common oath to extirpate the Jewish race by fire and sword. In one city alone twelve thousand of these unfortunate people were destroyed. In these several cities all the Jewish inhabitants were collected into a wooden building, and burned together with it. At Spires the Jews assembled in their own dwellings and set fire to them; and thus consumed themselves and their families, prefering to die by their own hands rather than furnish the savage multitude a holiday. The senate reserved for itself the right to search the ruins for treasure. Like horrors disgraced many other communities. Here is furnished another example—such as are so deplorably frequent in history of how fanatical frenzy, associated with hatred and the play of the baser passions, will work powerfully upon nations and peoples to the utter exclusion of the restraints of reason, of law, or of any other wholesome factor. And the greater part of those who, by their education and rank, might have been assumed to raise the deterrent voice of reason, themselves led on the savage mob to murder and to plunder the Jews.

Another most baneful superstition was, that a religious procession would help to stay the plague; hardly any means could have been more ingeniously devised for the better distribution of it. In practically all the cities, from Italy to England, there were spectacular processions in which many thousands took part. And was this purely a Mediaeval phenomena? By no means; only a year or two ago the same thing was done in St. Petersburg to stay the cholera!

That the emotions played a part regarding the plague was observed by many. Those who were terrified were more prone to contract the disease. Those who feared not and were of a cheerful, equable mind were, to the extent at least of that benign influence upon the organism, the more likely to escape. Boccaccio, in writing the Decameron, recognized that pleasant thoughts were the best preventive. Thus did Bulwer also have pleasure seekers in "Rienzi." It was advised to "banish melancholy and fear, live well and avoid all excess; if you read, choose amusing books—not those that treat of the plague." In some cities the publication of the death list was prohibited, by reason of the depressing effect upon the sick; and for the same reason funeral bells were not to be tolled. Papon, a firm believer in the power of the mind over the body, considered that "the solicitude, the abandon, the lack of all things, produced diseases without number." Those who despaired threw away their one chance of life; those of sanguine temperament resisted well. Gasquet found that sickness and death often result from the imagination. The plague often followed the panic fear of it; the latent infection was excited by terror. The greater mortality among the lower classes was attributed to fear and superstition, "the fatalism of the Musselmans, although it keeps them from all precautions, frees them from terror and low spirits."

Thus are all phases of individual existence mutually and inextricably interrelated; extensive and prolonged deterioration in any one aspect is bound in time to affect perniciously the others in time; such hideous psychic phenomena as are here stated do not obtain in the beginning of any such calamity as the Black Death. But it is the circumstance (and a most pathetic one) that the exercise of the heroic virtues for any lengthy period is contingent upon the maintenance of normal living conditions in general; otherwise the psychic stamina deteriorates, manners become dissolute, morals depraved and consciences debased.

Eclampsia, M. Dillon (Jour. Missouri State Med. Assn., Aug., 1911), does early evacuation of the uterus. The ovum or fetus is the source of the toxins. Statistics show lower mortality after labor. Preliminary to delivery, we had best avoid the use of chloroform during convulsions. Punctures should be made of the membranes to hasten spontaneous dilation and also to lower blood pressure. Dillon injects veratrum (MXV—XX of the fluid extract); gives an enema of warm milk, with 40 to 60 grains of chloral; put two drops of croton oil on the base of the tongue. If possible he prefers to wash out the stomach and inject through the tube 2 ounces of castor oil, with two drops of croton oil. Sweating should be induced by hot packs, or sweat cabinet for thirty minutes, using ice to the head, while heat is applied to the body. A pint of normal salt solution should be injected subcutaneously; or in emergency several quarts may be thrown in the bowel. This sweat and salt injection are to be alternated every hour—provided there is an equilibrium kept between the solution injected and sweating. Nitroglycerin for convulsions. A dessertspoonful of concentrated salts is given every fifteen minutes until catharsis, if the patient can swallow. Cups, venesection or leeches are appropriate for congestion, cyanosis or stertorous breathing. Medical means failing, Harris' method of manual dilation, forceps and version must be considered.

Typhoid Serum Successful. During a recent discussion in a session of the American Hospital Association every physician who spoke testified to the benefits resulting from the use of anti-typhoid serum. Supt. J. M. Cosgrove of the Winnipeg General Hospital stated that before the serum came into use it had been almost impossible to prevent the spread of the fever among nurses. Dr. H. W. Austin of the United States Marine Hospital Service, stated that the serum is being more and more used in the many hospitals, and with success. He believed it the greatest preventive of the disease yet found. Dr. Morrell of Baltimore detailed the results of its use in the army camps at San Antonio; that among 1,200 men submitted to the treatment only one had the fever and that in a very mild form. (Vaccination against typhoid is now obligatory in the United States army.)

Abdominal Pain. R. M. Funkhouser (Jour. Missouri State Med. Assn., Aug., 1911), considers the diagnostic significance of abdominal pain and observes that pain should put the physician on his guard. It will not be absolutely pathognomonic of the seat of the affection. We must guard against using narcotics in such manner as would tend to mask the true condition. The initial pain is oftentimes more important than the subsequent diffuse pain that follows. The physician should inform his patients and families as to the significance of abdominal pain; and that it should never be ignored nor underrated.

THE TREATMENT OF DIABETES.*

BY DARWIN W. WAUGH, M.D.

FOR many years the problems of the etiology, pathology, and pathogenesis of diabetes were complete mysteries, and very much still remains to be learned about the disease. While we knew so little about the matter, all that could be attempted in the way of treatment consisted in purely empirical experiments with various drugs, which yielded almost uniformly unsuccessful results, and dietary measures, which were based upon the rational conception that the mechanism of carbohydrate metabolism was out of gear and might improve if given a rest Much very valuable work has been done along this line and since the scientific studies of such men as von Noorden and Naunyn, it has become possible to apply this method with very good results in a certain proportion of cases, if conditions are favorable. While the difficulty of applying these scientific principles has been made somewhat easier in the past few years, it still requires much study of the subject, infinite pains, and a fortunate combination of circumstances to carry any given case to a successful issue. While this fact should not discourage us, it perhaps too often has the effect of confining our attention so closely to the dietetic aspect of the case that we come to have rather a narrow view of the subject. It seems quite possible that with our recently acquired knowledge of some of the etiological and pathological factors of this disease, we may arrive at better results if we study each case with a view to acquiring as nearly as possible an accurate knowledge of the whole process, and try to look beyond the mere symptom of glycosuria. I shall therefore review briefly a few of the important points in the theories now accepted with regard to diabetes.

We do know that disease of the pancreas is frequently associated with diabetes. It was first shown experimentally by von Mehring and Minkowski, who proved that diabetes developed in dogs in whom nine-tenths or more of the pancreas had been removed. It was further shown that the external secretion of the pancreas had no relation to diabetes, as a small portion of pancreatic tissue, grafted into some abnormal situation was sufficient to protect depancreatized dogs against diabetes. The conclusion was then reached that some internal secretion from the pancreas was necessary for the completion of normal careohydrate metabolism. The investigations of Cohnheim, although they have not yet been satisfactorily substantiated, are interesting in this connection. He found that while neither muscle juice nor pancreatic juice (an extract of the pancreatic tissue) were capable of breaking down sugar unaided, the combination of these substances in certain proportions was capable of accomplishing this. At all events it seems not unlikely that the lack of an internal secretion of the pancreas may be responsible for the failure of carbohydrate combustion in many cases of diabetes. There has been a growing conviction in recent years that this internal secretion is a product of the islands of Langerhans, although this theory is still challenged by Pratt of Boston and others.

How far our pathological findings in diabetes bear out these experimental studies may be seen in the figures of certain pathologists. For instance, Opie records disease of the pancreas in 254 out of 288 cases of diabetes which came to autopsy, while Cecil found it in 88 per cent. of 90 cases studied. Opie further suggests that even in the cases in which no anatomical changes were found there may have been undemonstrable functional changes.

Chronic pancreatitis takes two general forms, one in which there is a diffuse overgrowth of connective tissue which grows between the acini and islands, and causes an early atrophy of these structures (interaciner pancreatitis). 206 of Opie's 288 cases were of this variety. In the other form, the connective tissue overgrowth is primary between the lobules of the organ, and only in the later stages involves the secreting structures and the lobules (interlobular pancreatitis). The first form, which occasions diabetes earlier in its course and in a more severe form, is supposed to be due to the action of toxins carried to the gland by the blood stream, as alcohol, syphilis, toxins of alimentary or metabolic origin, etc. The interlobular form, on the other hand, is due to disease involving the excretory ducts, such as might be occasioned by gall stones, pancreatic stones, carcinomata or other new growths obstructing the ducts, ulcer of the stomach or duodenum, or ascending infections from catarrhal conditions of the gastro-intestinal tract.

Various other organs have been accused of complicity in the causation of diabetes. Among these are the nervous system, liver, pituitary body, thyroid, and adrenals, but while these organs may play some part in carbohydrate metabolism, none of them show the pathological changes in diabetes that are so frequently found in the pancreas.

A consideration of the etiological factors of diabetes suggests that the proper care of these conditions may well be considered a prophylactic measure against the development of diabetes. Diseases of the gall ducts, stomach, and duodenum are so frequently associated with pancreatic disease, that the possibility of the development of diabetes should be borne in mind, and if they do not respond to proper medical treatment the surgical measures which so often bring about a radical cure should be seriously considered. In this connection, the simple test of administering 3 ounces of grape sugar in a half pint of coffee, and subsequently examining the urine for sugar will prove a helpful procedure in determining the condition of the pancreas.

It will be remembered that the interacinar type of pancreatitis, is the one ordinarily met with in diabetes, although perhaps it is not as common a condition as the interlobular. The toxemias of syphilis, alcoholism, gastro-intestinal catarrh, arteriosclerosis, etc., being so frequently responsible for this type of the disease, be combated more energetically before the onset of diabetes.

The principles outlined in the consideration of prophylaxis should by no means be lost sight of after the disease has once made its appearance. When there is a history suggesting the presence of some of the surgical indications in the upper abdomen, the mere presence of glycosuria should offer no contraindication to their rational treatment. In a paper published last year in the British Medical Journal (No. 2573, p. 973), Mayo-Robson describes his experience with this class of patients. In the first place he states that the old

*Read before the Brooklyn Medical Association, February, 1911.

bug-bear of the danger of operating upon patients with glycosuria may safely be disregarded if proper precautions are taken. These include careful asepsis, free catharsis, and the use of alkalis to reduce the danger of acidosis. He describes a number of cases of diabetes in various stages of development, which were associated with disease of the pancreas and bile tracts, the patients being very much improved or absolutely cured by operation. The most striking of these was that of a woman suffering from diabetes for four years, who had 4.8 per cent. of sugar with acetone and diacetic acid in the urine. She was apparently cured by operation and at the last report, which was two months later, was still sugar free.

He laid considerable stress on the Cammidge reaction for pancreatitis as a diagnostic aid, but most investigators fail to report the reliable conclusions that its author is able to obtain from its use.

Mayo-Robson concludes that surgical methods are frequently curative or palliative, and that they can be carried out at very small risk.

In non-surgical conditions it may be possible in some instances to attack the fundamental trouble in the gastro-intestinal tract. It seems not unlikely that the beneficial results obtained by the administration of salicylates may be due, in part at least, to their antiseptic action in both the gastro-intestinal and biliary tracts.

Syphilis should be carefully sought for as a possible underlying cause. In this connection the use of the Wassermann test might prove helpful. Such an investigation in a series of cases would be of great interest. I am convinced that specific treatment, along with the dietetic treatment was of considerable help in obtaining a very satisfactory result in one of my patients.

The employment of organotherapy is attractive theoretically, but has never accomplished anything definite. of other drugs that are advised, opium is perhaps the most servicable. It should be used for short periods only, after the glycosuria has been reduced to its lowest limit by dietetic measures. Both opium and atropine, which has been recommended by Rudisch, are supposed to act upon the liver, reducing its glycogenolytic activity.

Alcohol is perhaps the most effective in making possible a diet high in fat, and its fuel value helps to supply the caloric requirements.

As to general hygienic measures, the value of rest and plenty of oxygen is being more and more recognized. Lichty has recently emphasized the importance of this conservation of energy, with the encouragement to oxidation by means of the open air life. He states that since his patients have been treated with these objects in view he has been able to secure much better results. On the other hand, in the milder cases a certain amount of excercise stimulates oxidation and in this way reduces the hyperglycemia.

In the great majority of cases, considering our present degree of knowledge, or lack of it, diet must be our sheet anchor in the treatment of diabetes. The object of the treatment, as before stated, is to rest the diseased organs involved in the carrying on of carbohydrate metabolism, in the hope that the rest will enable them to perform their duties better. This may frequently be accompliished and shows itself in a higher carbohydrate tolerance. Under these circumstances the unpleasant symptoms disappear and the patient's condition is improved in every way, sometimes amounting to a cure. During the entire treatment the general condition of the patient, his weight, strength, and vitality should be carefully watched and the urine should of course be examined frequently. To acquire any intelligent view of the course of the disease a 24 hour specimen should always be examined and the actual amount of sugar excreted per day should be ascertained. The danger of acidosis may be roughly judged from the presence or absence of diacetic acid. Its presence is always a danger sign.

I will merely outline the principles of the dietetic treatment as the subject is too large for fuller consideration here. It may be found in great detail in von Noorden's classical work, and a very practical article by Dr. Theodore C. Janeway giving diets suitable for our use in this country may be found in the "American Journal of the Medical Sciences" of March, 1909.

The first step in the treament is to determine the carbohydrate tolerance of the patient. This is done by giving a diet quite free from carbohydrates, with the exception of bread which is given in gradually decreasing quantity. If the glycosuria disappears before the quota of bread has gone below two ounces a day, it is termed a mild case. The patient is then given a preliminary two weeks of carbohydrate-free diet, after which the bread is gradually added to the diet again until the sugar reappears. He should then be kept on a diet containing about three-quarters of the amount of carbohydrate that they best tolerate, and the most favorable one should be ascertained in each case. Alkalies should always be administered while a patient is on a strict diet, or at any time if he exhibits the danger signs of acidosis.

The severer types of diabetes are variously classified according to their carbohydrate tolerance, depending upon whether the sugar disappears with complete withdrawal of the carbohydrate, only with restriction of the protein as well, or not at all. The principles of treatment are more or less alike for all. If they can be made sugar free, they should be kept so for two weeks, and von Noorden states that even if the acetone bodies in the urine increase during the first week, they usually subside during the second week. At the end of two weeks the patients are subjected to two days of so-called green diet or hunger days, in which the carbo-hydrates and proteids are practically eliminated from the diet. It is then necessary to restore the protein constituents of the diet, although these should be permanently restricted in the severer cases to an amount not exceeding three to six ounces of meat a day. Some carbohydrate must also be given even if it causes the appearance of glycosuria. Lusk has shown that certain patients who are even manufacturing sugar from protein may utilize a certain amount of carbohydrate material. With these patients the comparatively liberal diet should be given for two to three weeks, and then two or three green days should be prescribed. Thus by alternating short periods of strictly limited diet with somewhat more liberal diet and by ascertaining which carbohydrate is best utilized, one may gradually succeed in raising the limit of carbohydrate metabolism. The oatmeal diet of von Noorden, which consists of six to seven ounces of oatmeal with six to eight ounces of butter, and several eggs made into a porridge, is particularly servicable in

diabetes in childhood (Croftan) and in very severe cases in which the patient is threatened with coma.

The soy bean has been recommended in diabetes on account of its low carbohydrate and high fat and protein content.

While I have no intention of minimizing the importance of the dietetic treatment, which I believe is not carried out vigorously enough in by far the greater number of cases, in conclusion, I wish to emphasize the importance of looking on all these cases from an etiological standpoint, and endeavoring to get at the fundamental condition, whether this be surgical or otherwise.

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Eye-strain.—To those familiar with the uphill fight of George M. Gould, who endeavored to make common property the facts relating to eye-strain, the recent contribution of Professor Ellice M. Alger (Boston Medical and Surgical Journal, 2d February, 1911) will appear as a splendid acknowledgment. In Alger's paper the several points are clearly outlined. The eye is actually brain, or an expanded portion of it. The musculature is complicated and requires the co-ordinated actions of one-third of the special cranial nerves, together with that of the centers in a large portion of the cortex, and of the basal ganglia. The chief strain occurs as a result of *muscular effort to overcome any visual difficulty*. When compensation for any error, however gross, is easy, no eye-strain results. When compensation becomes nervously expensive, it means that reflexes will develop. Eye-strain is more common, more serious in fairly good eyes. For they, by straining, secure vision. A bad defect will inhibit sight, even by extra muscular effort. Muscular, nervous and psychic strains may occur. The screwing of eyebrows, and facial tremors occur as a result of innervation at the centers overflowing and stimulating adjoining centers when a difficult vision is attacked. Efforts to overcome this cause the overflow. Something, generally the deuce, is to pay—in nervous outwear. Psychic strain due to the necessity of reforming mental judgments, and to distortions of objects as perceived, will be originated, and so the patient suffers, usually unconscious of the reason, for he had never known facile and correct vision.

Gastrectacia is best treated by massage, states J. K. Miller (Denver Med. Times, Sept. 16, 1911), who for nearly six years past has used a massage machine. It has proved efficient in more than forty cases, without any complete failure and with results that were only partial in but two cases. Few patients need more than a three-month's period to be cured; and the results seem permanent. The course given consists of daily treatments of five to seven minutes each for the first month; three treatments per week for the second month and one or two treatments per week for the remaining four weeks. All patients must be ninety days under treatment, and a few less responsive cases a longer time. A rigid diet is essential in the treatment. The vibratory treatment will not restore a ptosed stomach, though in some cases decided improvement has been noted. The displaced organ must be otherwise cared for; the spinal bandage or the moleskin adhesive apron belt is used.

CAN THE MIND BECOME DISEASED?

BY AMOS SAWYER, M. D., HILLSBORO, ILLS.

THE object I have in view is to present facts, not fancies, which will convince you that my opinion that the mind cannot become diseased, is correct. It is always a difficult task to pierce the mists of received opinion and stem its tide. I agree with Plato when he said: "Never be afraid to question your author and stop him in his loftiest thoughts and profoundest depths, with the question, 'Is it so?'" Huxley said: "An opinion which outstrips evidence is not only a blunder, but a crime." And as I do, agreeing with him in this, I shall rely upon *evidence* to sustain my views on insanity.

Neurologists speak of the *mental* disorders of neurasthenia and the consequent morbid states of the body, whereas this should be reversed. When I was a student, 50 years ago, neurasthenia was defined to express debility or impaired activity of the nerves, now, given any latitude you desire to take. Dr. C. F. Hodge says: "When the nerve cells are fatigued by persistent work or electrical stimulation, the nucleus of the cell decreases in size, has a jagged, irregular outline, loses its open reticulated appearance and takes a darker stain, the cell protoplasm shrinks slightly and stains more feebly. These facts are forcibly demonstrated through the clinical study of the blood of neurasthenic patients, whether the agency in neurasthenia is a disturbance of the vascular or vaso-motor centers, such condition will disturb their equilibrium and the nerve cells will become weakened in nutrition and functional power; consequently the blood that distributes pabulum to cells and tissues is not normally or regularly carried to the nerve centers and they become impaired (diseased) and this causes neurasthenia, the mental disturbance being an *effect of a physical cause*.

If the brain structure is abnormal then the function and conduct will be abnormal. The highest nerve centers are developed after birth and are the lowest organized, hence they are the first to decay on account of their low organization and this is the reason, as a rule, intelligence, on account of diseased nerves, not the mind, declines with old age. These nerve centers become fully developed at 25 years and decline from 50, so the average time of mental work with the full force of intelligence and judgment is 25 years. In the cases of the so-called morbid minds, you will always find that there is a diseased, deformed or traumatic *physical* cause which obstructs the normal action. This is evidenced when the physical condition of the insane subject has been restored, for then the mind (the man) takes up the note where disease or injury broke off the strain. To illustrate: A miller living in Maine saw his son about to shoot at a snipe standing on a rock in the millpond and stood on one side to watch the effect of the shot; the ball glanced from the rock and struck the miller in the forehead. He remained in a semi-conscious condition for over a year, when a depressed bone was removed, and that instant the patient exclaimed: "Zeek, you dog, you missed it." Evidently he saw the result of the shot and framed this sentence but before he gave utterance to it the ball struck him. Some years ago, at Chicago, a sailor fell from the rigging of a schooner, he was removed in an insensible condition to the hospital and for a year remained in the ward unable to talk intelligently or take care of himself, and it was

thought that the accident had affected his mind. One day, when going through the ward, Dr. Brainard's attention was called to the case, and after a careful examination the doctor removed a depressed bone and instantly the pressure was removed, the man's reason was restored and he readily recalled the circumstance attending the accident, though the past year was a blank to him.

A man was shot in the head; his mind was clear on every subject but one; he could not remember the name of anything, not even his own name. He could tell the use of a comb, knife, fork, etc., but not their name. The ball was removed from the upper temporal lobe of the brain and at once he could remember names as before the injury. On January 27, 1906, Dr. Chambers, at St. Louis, Mo., operated on Charles Rogers, whose reason had been dethroned by a blow received on his head five months before, rendering him a raving maniac. It afforded some relief, but as there yet remained some thickening of the bone a second operation was performed February 22, thirty-two days after and the remainder of the thickened bone was removed; in all, 2¾ by 2 inches. In the previous eighteen months, Dr. Chambers has performed six similar operations, and in each case was successful in restoring the patient's reason, but in four of them it was not upon the skull, but the removal of reflex causes acting upon the *brain*. Dr. Chambers believes 25 per cent. of insanity cases can be cured by intelligent surgical operations. About the same time an operation was performed in Toledo, Ohio, upon an incorrigible twelve-year-old boy. The surgeon discovered a scar on the boy's head, before unnoticed, the skull bone was found thickened under it, and when this pressure was removed, the "demond" was exorcised from him, and he gave his parents no more trouble.

A few years ago the London Lancet reported a case of a man that had gradually grown *"mentally* weak," finally *losing his mind*. An expert in "mental disease" was consulted; local cerebration enabled him to locate the disease, and the history of the case warranted the diagnosis as an abscess, as the cause. A surgeon was called and ordered to trephine at a certain spot and make an incision to evacuate the pus; he complied, but no abscess was found; turning an enquiring glance at his employer, he was met with the command, "Cut deeper!" He complied, with like results; but the order was repeated, and this time the cavity of an abscess was opened and the contents removed and that instant the diseased mind (?) was made well again, and the patient recovered to become a living, speaking, walking monument to the truth that *man's mind cannot become diseased*, only it cannot make intelligent use of diseased or injured cerebral machinery. Ben De Barr, whose life's specialty was playing "Falstaff," although the lines he repeated were as familiar to him as the alphabet, suddenly found that he could not repeat them all without being prompted. Annoyed, astonished, alarmed, he consulted a specialist, who, after obtaining a history of his case, informed him that the cause would be found in the fissure of Sylvans, near the Island of Reil; that it was incurable, and would prove fatal. He gradually grew worse and had to abandon the stage. After his death a tumor was found at the locality mentioned. It was said that for some time before he died he "lost his mind," but could that tumor have been successfully removed, the mind (Ben De Barr), would have been himself again, for the injury was to the "Temple of the Holy Ghost," which is the temporary home of the mind (man). In agraphia, though the patient can think and talk he cannot write, or in aphasia, he is unable to use words to express his thoughts, though otherwise in a normal condition, we do not say that the mind is affected, but that it is due to a lesion located in the second left convolution of the brain; but from a similar cause let a person talk at random or act unnaturally, he is pronounced not of sound mind, whereas it should be not of sound body. In the asylum for the feeble-minded (should be called defective brain) they are taught to make use of some previously dormant faculties and in various ways become able to care for themselves. Were it possible to remove the defective cerebral contents and replace it with a healthy brain, the mind, released from the prison in which it had been confined, could be cut, polished, and come into the world to astonish its inhabitants with its brilliancy. In a majority of the cases there is an indisposition to make use of a perfectly constructed one. To illustrate: Referring to his boyhood days a learned judge said: "I was a widow's only child; her hope, her joy, her pride. I was sent home from school because I was supposed to be intellectually deficient, as I could remember, when I came to recite my lessons, not a single word. My mother undertook to teach me two short verses of a poem, which by her request I was to be permitted to recite at school, the next day. By noon I could repeat them correctly, but at night when I was ready to retire I could not remember one word. I can never forget the expression that came over my mother's face when she realized that her boy was what the world termed a fool; every drop of blood seemed to leave her face, which she covered with her hands and burst into a flood of tears. That moment it seemed to me that a bright light burst within me and I saw plainly all I had ever tried to learn and I exclaimed: "Mother! Mother! I can say it,'" and I not only repeated every word in the whole piece, but every one I had ever tried to learn. I think that she remained at my bed-side all night, for when I awoke early the next morning she was still seated by my side, anxious to find out if I still retained the memory which had remained dormant for so long a time. From that time I never experienced any difficulty in remembering what I learned." But for this incident he no doubt would always have been regarded as weak-minded, but as a renowned jurist and statesman he proved that he was in possession of first-class cerebral machinery. It was a case of indisposition, not inability.

As a rule, an epileptic, intellectually is above the average, the mental hebetude after an explosion lasting only the length of time necessary to re-oxygenize the blood and thus restore the cerebral equilibrium. The convulsion is cause by periodical production of a poison within the system affecting matter alone.

Helen Keller, blind, deaf and dumb, as a child was considered a vicious idiot, and always would have been so regarded but for the untiring efforts of her teacher, and thus proved that the mind, as it can never be, was not diseased, the defects being purely physical. Harvard College has bestowed upon her its highest honor, as she is in possession of one of the brightest philosophical minds in this, the twentieth century.

The incoherent talk of an apopletic, the fever tossing patient or brain concussioned subject is not evidence

of a morbid mind, but that of injured animal matter, used by the mind to receive and transmit intelligent messages, for after the material obstruction is removed, the mind (man) is himself again.

Life, whether animal or vegetable, is derived only from the immaterial. Matter sustains life by nourishing the material form it represents. The mysterious life contained in the acorn first derives its nourishment from the material substance stored within its shell, and until this miniature oak lifts its tiny head toward heaven's blue dome to become the monarch of the forest, its only food is matter. Man's microscopic life is a repetition of the oak; as the first nine months and ten days his life is materially fed in human soil, and during life, like any other animal or plant, he is alone sustained by matter. As seen, life, germ and sperm, is the divided portion of some similar life and therefore must have originated from a *creative life*. There could not have been an oak until an acorn had been formed and planted, nor an animal until a proper receptacle was created for the fecundation of the seed (sperm), and this necessitated a creative act (miracle) and therefore a creator; call it by whatever name you please. It is an axiom in reasoning, that whatever is, always has been, unless positive proof can be shown to the contrary, and in this case it has not been done.

The relation of mind to the matter to which it gave birth and Katallically holds together until from design, disease, traumatism or age, the material machinery becomes unfitted to perform its work, is not unlike a telegrapher to his instrument, if the line or battery is out of order the answer to messages received will be of such a nature as to lead one unacquainted with the cause to believe the operator (mind) is at fault, but mend the breaks in the matter and all will be right again. This something, not matter, from whence comes that monitory voice that warns us as we walk and rebukes us when we stray, cannot be subject to injury or disease, traumatic, microbic, or otherwise.

Obsessions are common and do not give evidence of cerebral disassociation or weakness of nerve element as most neurologists assert. For a limited length of time how frequently do we hear nearly everyone whistling or humming some new and popular air, when it gradually dies out. This was not the result of a diseased nervous condition, or disassociation of neurons; it was merely the mind (man) for: "The mind's the man for a' that," recalling, by putting into action a nervous movement by which he reproduced pleasurable musical sounds, that he had heard some time before. In the same manner, at will, we recall familiar forms and faces, and this is done by setting in motion certain nerve forces formed weeks, months, years ago which at that time painted the picture of the object recalled, and if from any reason this condition is automatically set up, it will produce the same result and the presentation will be pleasant or disagreeable as the case may be.

A man that had been fighting chinch-bugs every day for three weeks to keep them out of his cornfield, told me that with his eyes open or shut he could see them running and although aware that it was only a hallucination, the sensation was only the more distressing. This continued for twenty-four hours after he abandoned the work. Another case was that of a lady, a musician, who after hearing a new song, during waking hours, for two weeks constantly heard the words and tune, to the exclusion of almost everything else, and it made her very nervous. Now, these persons were not unusually nervous. It was not an obsession of neurasthenia, nor were they on the "border land of insanity." The condition was caused by a continuation of the nerve movement which had first produced the picture of the object before the mind (man) and continued for such a length of time that the imaginary form of the bug and tune as well as the words of the music was automatically produced by the same process, as perfect as the real; just like a wheel revolving rapidly will continue the revolutions producing the same aerial vibrations for a time after the cause has been removed. In these cases the mind distinguished the imaginary from the real and sought relief from the annoyance; in these cases the will power cannot control automatic nerve movements; clock fashion they must run down. After a long railroad journey we hear the rumble of the cars and feel the motion of the train for some time after we disembark. Now did these obsessions happen without an original cause, then surely there must be a *physical* screw loose, wire broken or twisted in the human machine; in such instances the physician's province is to try and locate the impaired part and repair it.

I have had little experience with "morbid fears." The cases that have come under my observation could hardly be called morbid, though unaccountably strange. During the Civil War an engineer on what is now the "Big 4" railroad was afraid that he would be drafted; but the morning he took his train out of Terre Haute, he found that his name was not the conscripts; he was delighted, and full of fun until this side of Mattoon he turned suddenly to his fireman and said: "I'll be killed in less than an hour." He was greatly depressed, when going down the grade east of Shelbyville the train broke, the engine was thrown from the track and he was killed. On the night before the battle which would begin on the morrow General Lyttle finished his musical composition: "I am dying, Egypt, dying," because he was suddenly impressed with the belief that he would be (as he was) killed the next day. These people did not fear death. What, psychologically speaking, shall we call this condition? For the word *impressed* in this connection does not explain anything of an intelligent nature. It was not the effect of matter on mind, but of something *not matter* on the mind. What was it? Judge Jesse J. Phillips told me he was afraid to go up to a great height, like a tower or a very high building and look down, as he was possessed at such a time with a strong desire to jump off and feared that he might not be able to restrain this feeling. Recently a young dentist told me that he never looked out of a window in a high building but the desire to jump out seized upon him and was hard to resist. As the people were in good health this feeling could not correctly be called morbid. Query: In many cases where a person was supposed to have been killed by falling from a window, may it not have been that they were irresistably possessed with this desire and *jumped out?* Another case was that of a lady I met in Boston, Mass. She told me that she had crossed the ocean many times, but when she visited her country seat, twelve miles from the city, she always rode in her carriage, as she was afraid to travel on the steam cars. She was in perfect health, and so far as she knew never had been

sick. She was an anti-railroad idiosyncratic. I have known many persons who disliked and avoided crowds, but never one who *feared* them. As most persons enjoy making one among a crowd of people who have assembled for pleasure or profit, this seems to be natural, and the non-mingling minority class, unnatural, but not morbid or on the borderland of insanity any more than most persons enjoy going to the theatre or opera that some one who feels bored by it should come under the same ban because unfortunately he was of a nervous temperament. It is a *mind* feeling, a natural like or dislike. When asleep, and dreams "those wild magicians that do play such pranks when reason slumbers" are the fears and joys we then experience; the somniloquence and somnambulism are they caused by "disassociated" nocturnal neurons? Is the action of nerve force akin to electricity which night and day is always active until life ends? When asleep the relation of mind to the nervous system is not unlike that of an engineer to his engine. If it is alive (fired up) the steam (nerve force) generated during the time he is asleep, keeps up a certain motion (dreams); but if from any cause the throttle becomes slightly open the engine will start up the track (somnambulism) until the engineer wakes up and controls its movements. When dreaming the rapidity with which sights and sounds pass before us proves that it is the reproduction of a nervous force once used but now acting automatically. That mind does use matter to express thoughts and sights originating within itself, as well as control its movements to reproduce that already received. A kind of a mental endos and exosmos is illustrated in such cases as Judekort, the chess player, when asked how he could play in different cities five games at the same time, replied: "I see only the board that is called and after I make my move that board disappears from my mental vision and the next one called appears." Now as this was due to uncontrolled material movements of the nerve, or mind cells, as Haeckel asserts, is the case, then the number of boards should appear in the inverse order, 5-4-3-2-1, but as they came as called, one and five, two and four, and so on, beyond doubt, this proves that matter is controlled by something superior to it, call it by whatever name you please. Again take twin brothers, both physically perfect; one becomes a renowned sculptor; the other, with the *material* conformation like his brother, could not mould a lump of clay into a common brick; and why? Because the mind (the man) did not fancy that kind of work. There was no *physical* reason for this difference; it was a purely *mental* one. So and for the same reason, in most families, we see among the children, this same condition. When we place our hand on a piece of marble, our *sensational* understanding conveys the impression that it is colder than the carpet or wood in the same room, but something not matter says no, the apparent heat difference is due to the absorptive power of each substance. When first we put a striking clock in the room we hear it peal forth each hour, but this gradually grows less perceptible until we cease to notice it, not because the aerial waves from the bell did not, as before, reach the aural nerves, but the mind, being otherwise engaged, failed to notice it.

In answer to the question as to the whereabouts of a certain person, how frequently comes the reply: "Oh, he's dead and buried," so many persons believing that the man is buried with his body. It's no longer a man, only a tenement void of its tenant, placed there out of respect for the man who once dwelt there, but who no longer needs its shielding and sheltering care. The man (mind) that gives to the tenement it occupies the form, common to the race and peculiar to the individual, vacating it only when it becomes uninhabitable, and not from a mental cause, or disease, for in that case there must be *immaterial microbes*. You cannot fracture a spiritual arm, leg or head; neither can a supernatural body have small-pox, typhoid fever or tetanus or be directly injured by any material thing. The only way a dissolution of one combination chemical and spiritual, we call soul and body can be produced, before the material machinery has been worn out is by the introduction of some substance which destroys the material part of tenement it occupies. The body grows from the blood current of the heart and if this sanguineous soil is deficient in any of the requisite materials to that degree will the building be deficient in its structure. The blood is not the life thereof, *but for it*. Anything which obstructs the normal flow of the blood-current will cause in some part a deposit (like a river sand-bar) and such deposit will be named in accordance with its structural formation, be it tubercle or something else.

Mind is a part of Deity, created and divided by his command, therefore cannot become diseased. Its death can only be by re-absorption. Then let us be logical and call it *physically* deranged—not an unsound mind, but an unsound body.

Finally, without the fear of contradiction, I make this declaration: everything in nature depends for what it is, upon that which it is not—matter upon not matter. There are but two factors in the universe, mind and matter; mind produces; matter is the product. Every successful invention is an idea realized, it is the material construction of a mental conception, for there is no other source from whence it can come. That the producing powers are supernatural, the produced forms are natural. The steam engine is a material shape, but *nature* never moved matter into this shape. With such evidence of the creator ever before him how a physician can proclaim himself an atheist is more than I can determine. It is said: "Where three physicians are council, two of them will be atheists, and therefore believe that the mind being only matter can become diseased." For myself, I can say with Cicero: "But if I be mistaken in this that our souls are immortal, I am, however, pleased and happy in my mistake; nor while I live shall it ever be in the power of man to teach me out of so solid a comfort, and so durable a satisfaction." I can say with Moore:

"There's nothing bright, above, below,
From flowers that bloom to stars that glow,
But in its light my soul can see
Some feature of the Deity."

Prof. Alger, in a moderate and rational summary, considers migraine and neurasthenia. His original article will reward our study. The proof of the pudding is the eating. Ranney, Gould, Thorington, Pyle, Duane, Coburn and many others attest the proof.

"Non-bacterial" pyuria (Am. Jour. Surg.) is very suspicious of tuberculosis.

SPECIAL REAGENTS, AS TESTS FOR URINARY PROTEIDS.

BY S. R. KLEIN, A.M., M.D., PH.D.
Director of Fordham Research Laboratory, New York.

RECENTLY some very delicate reagents, and also trustworthy tests have been made and introduced to the profession. Some authors have made objections to the reagents mentioned below, especially as to their delicacy, but I have found that they react excellently to albumin, and not, as some, to various proteids.

I do not mean to infer that they have no action on other proteids, but they are far superior to other agents, such as nitric acid, with which many errors have been made.

Thrichloracetic acid precipitates, albumoses and compound proteids as well as globulin and serum albumin. It is most advantageously used in the form of a saturated solution, and as it is, extremely soluble in water, some crystals of the acid should permanently remain undissolved in the solution as evidence of absolute saturation. The solution is used in the same way as nitric acid; the presence of a trace of albumin is indicated by a disc of opalescence immediately over the layer of acid; but unfortunately the compound proteids indicate their presence in the same way.

Salicyl-sulphonic acid precipitates all proteids except peptones. It is used as a saturated solution, a few drops of which are added to some perfectly clear urine in a test tube; the mouth of the tube is closed with the thumb and the contents of the tube are then mixed by shaking. The presence of albumin is shown by a general opalescence or turbidity; if but a trace is present the opalescence only appears after the lapse of two or three minutes. On heating, the precipitate of albumin and globulin is coagulated; the other precipitated proteids are dissolved and are precipitated on cooling. It is an excellent test for strychnin also. One or two drops added to the suspicious urine make it red. Even 2-3 drops of urine are enough, to produce the extreme red color. In a criminal case, tried in the State of Illinois, this test proved satisfactory.

Ferro Cyanide Test. After freely acidulating albuminous urine with acetic acid, and then adding a little of a 10 per cent. solution of potassium ferrocyanide, a cloudiness is produced. If opalescence be caused by the acetic acid alone, it is due to a compound proteid and should be compared with that yielded by another specimen of acidulated urine to which the ferrocyanide is subsequently added; any increase in turbidity, which is not dissipated by heat, is due to albumin. Oliver (Bedside Urine Testing), 1899) has modified this test so as to present it in an easily portable form. He uses strips of filter paper respectively impregnated with ferrocyanide and citric acid. For use at the bedside the reagents are dissolved out of the papers in a little water.

Spiegler's Test. This consists of 4 grms. of mercuric chloride, 2 grms. of tartaric acid, 20 grms. of glycerine, and distilled water to 100 cc. A little of this solution is poured into a test tube, and some of the urine, previously acidulated with acetic acid, is gently poured down the side of the inclined tube so that it may float on the reagent; the presence of albumin is indicated by a white precipitate.

Tanret's Test. Prepared by dissolving 1,35 grms. of mercuric chloride and 3,32 grms. of potassium iodide, separately in two amounts of distilled water; the solutions are then mixed and 20 cc. of acetic acid are added, along with distilled water, to 100 cc. The test is applied in the same way as with the Spiegler's test, a white precipitate at the junction of the urine with the reagent indicates the presence of a proteid.

Millard's reagent consists of 22 parts of a 5 per cent. solution of potassium hydrate, seven parts of glacial acetic acid and 2 parts of phenol. The urine is floated on the reagent as with the nitric acid; all precipitates which are produced, except albumin, disappear on heating.

Jolli's Reagent. It consists of mercuric chloride, 2 grms., succinic acid 4 grms. and sodium chloride 4 grms., dissolved in 100 cc. of water. To 4 cc. of urine, 1 cc. of acetic acid and 4 cc. of the reagent are added and the mixture is shaken. In a second tube, the same volumes of urine and acetic acid are placed, along with 4 cc. of water instead of the reagent. The two tubes are compared; any excess of turbidity in the urine to which the reagent was added is indicative of albumin.

Finally I have to mention also the Picric Acid Test, which has been used for the last two or three years more than all the other reagents together. When a saturated solution of picric acid is added to urine that contains albumin, it becomes turbid; alkaline urine requires slight acidulation with acetic acid before adding the picric acid. The turbidity may be due to serum albumin, globulin, compound proteids, albumoses and alkaloidal bodies, such as quinine, if present beyond a mere trace. On heating the turbid urine all these precipitates disappear except albumin and globulin. With traces of albumin, the best results are obtained by carefully adding the picric acid solution so as to form a layer that rests on the urine, when a faint haze at the plane of contact occurs.

489 Pelham Avenue.

Permanent Health Exhibits.—F. B. Wynn, Minneapolis, reporting for the Committee on Permanently Installed Health Exhibits and Bulletins to the Section on Preventive Medicine at Los Angeles (Journal A. M. A., October 14), advocates the establishment of permanent health exhibits and of methods of educating through the sense of sight in regard to health matters. The value of traveling or temporary exhibits has been established, and he appeals for supplementing these efforts by permanently installed exhibits which will teach the lessons of hygiene and sanitation continuously. The evangelical stage of health propaganda has passed. We now need the daily teaching and practice. He would advocate the decoration of school rooms with pictures of Jenner, Pasteur or Koch, and he would have permanent exhibits, illustrating the various diseases, placed in school buildings; also in court houses, city halls, railway stations, etc., etc. He says: "The American Medical Association could engage at this time in no work of greater practical value to the public health than in the standardization of data and material for small exhibits of this character, making the product so cheap that it would be available for remote rural as well as urban districts."

FOREIGN BODIES WITHIN THE URINARY BLADDER.

BY C. C. MAPES, COVINGTON, KENTUCKY.

THERE have been recorded in medical literature many curious and interesting examples where extraneous articles of various kinds have been found within the human bladder. Denuce, in 1856 (Journal de Bordeaux), collected and tabulated three hundred and ninety-one such instances, including all varieties, and many similar cases have since been recorded.

While there can be no doubt that occasionally, in both males and females, foreign bodies are inserted into the urethra in a spirit of mischief, or for purpose of experimentation, it is probable that more often than otherwise one of the four following causes may be regarded as the incentive:

(1) To produce sexual excitement.
(2) To relieve urethral irritation.
(3) To check urinary incontinence.
(4) To relieve urinary retention.

Among the extraneous articles discovered in the bladder may be mentioned: Lead and slate pencils, or fragments thereof; metal and bone pencil tips and guards, pen holders, rubber tubing, pieces of straw, wood, wire, stems of plants, glass tubes and rods, paraffine and sealing wax, chewing gum, feathers, kidney beans, pipe stems of clay and other materials, pine needles, heads of wheat, pieces of cane, buttons, paint brushes, shoestrings, watch chains, shawl, hair and hat pins, pebbles and marbles, catheters, needles of various kinds, ligatures, filiform bougies, goose quills, bone splints, bullets, vaselin masses, bunches of hair, tooth brush handles, candles, clinical thermometers, syringe nozzles, etc.

Dennis divides vesical foreign bodies into two classes, viz.: (a) natural, and (b) unnatural—the former being calculi, the latter including all other varieties. Winckel suggests the following classification: (a) foreign bodies which enter the bladder from within by the process of ulceration, (b) those which form within the bladder.

Obviously these classifications do not include all the varieties, since some of the most curious and interesting examples are where extraneous articles have been introduced into the bladder from without through the urethra. Packard, in 1897 (Annals of Surgery), collected over two hundred cases of this kind.

In this compilation the writer will refer principally to the latter variety, i. e., foreign bodies introduced into the bladder through the urethra. Some of the examples excerpted have not heretofore appeared in print, the others have been abstracted from available sources. The literature of this subject is so voluminous that it would be manifestly impossible in a short paper to review all the recorded cases, therefore the writer selects only a few of the most curious and interesting.

Several instances have been reported where ligatures used after extirpation of the uterine adnexa have found their way into the bladder, furnishing the nuclei of calculi, and were later removed.

Deletrez records an example where, during hysterectomy, a gauze sponge escaped into the cavity among the intestines, and owing to the serious condition of the patient at the time was not searched for. Six weeks thereafter the woman complained of difficulty in micturition, and the sponge was discovered at the meatus urinarius through which it was readily extracted!

Morris speaks of an instance in which a pair of pressure forceps left in the abdominal cavity during celiotomy entered the bladder through an ulcerated and perforated wall, from which the instrument was removed a long time afterward.

A number of cases are cited in the literature where pieces of bone and other sharp substances, together with fecal matter, have entered the bladder through perforations.

In Packard's case an electrical engineer of twenty-seven fourteen years previously introduced into his urethra a watch chain bar composed of vulcanized India rubber, which was successfully removed from the bladder by median cystotomy.

Roberts speaks of seven instances in which he found extraneous bodies in the bladder, five in males and two in females. In the males the foreign bodies were: in two broken catheters, one a piece of chewing gum, one a section of small glass tubing, one a leather shoestring. In the females, one was a brass hairpin, the other a piece of wood one inch in length. All these foreign bodies were successfully removed, some through the urethra, others by suprapubic cystotomy. The same author records a case in which two silk ligatures were left in the bladder after suprapubic cystotomy, and each later formed the nucleus of a calculus.

Blue observed two instances of vesical foreign bodies, both in males: One was a filiform end of a urethrotome, the other a catheter. Both were removed through the urethra, the bladder not being opened.

Albert speaks of a young man who passed a "nut" into his urethra, which entered the bladder, but caused no discomfort until deposition of urinary salts formed a calculus.

Bloom mentions the case of a young girl who inserted a button hook into her rectum which later worked its way into the bladder, from which it was successfully removed. The same author also records the case of a man sixty-four, who, for the purpose of having a more perfect erection, passed part of a handle of a tooth brush into his urethra. The section was three and a half inches long and was rounded at both ends. He used this object many times during a period of six months, and after completion of coition it would fall out of the urethra. However, on the last occasion it slipped into the bladder, from which it was recovered by suprapubic cystotomy.

Vance speaks of several interesting examples: A young woman's bladder was opened because of prolonged and persistent cystitis, the incision being closed with silk. Six months thereafter the bladder was reopened for removal of a calculus which had for its nucleus one of the silk sutures.

A maiden lady of forty was advised to employ a vaginal douche; instead of this it appears she inserted the syringe nozzle into her urethra, and had been douching the bladder! The nozzle, about five inches in length, became detached and disappeared into the bladder! It was successfully removed through the urethra.

The same author also mentions two instances where catheters were found in the bladder, one of which he removed per urethram, in the other case suprapubic cystotomy was required, the catheter having broken into many pieces.

Cartledge cites three examples in males, one a piece of chewing gum, second a rubber catheter, third a sec-

tion of silver catheter. The two former were removed by suprapubic cystotomy, the latter by making an opening through the perineum.

Samuel reports three instances in males where calculi formed around pieces of rubber catheter as nuclei, and were removed by operation.

Anderson observed several cases in females where calculi had formed in the bladder with foreign bodies as nuclei. In the majority of instances the foreign bodies were hairpins, and the calculi were removed without opening the bladder. The same author cites an interesting case in which a pistol bullet entered the bladder, and four years later passed into the urethra, from which it was readily extracted.

Morand cites a case in which a long wax taper was inserted into the bladder through the urethra by a man, and White extracted by median cystotomy a wax taper which had been used by a young man for purposes of masturbation.

Gross found three caudal vertebrae of a squirrel in the center of a vesical calculus taken from the bladder of a man who had practiced masturbation with the tail of this animal.

Terrilon and Caudmont each record an instance where a lead pencil, or pencil case, introduced into the urethra passed into the bladder. One patient died in three months, the other lived four years and then succumbed from ulceration and perforation of the bladder.

Poulet mentions an instance where a metal sound was broken off in a man's bladder, and later made its exit from the anus, and Wheeler speaks of a man who passed a button hook into his anus, which later found its way into the bladder and was voided spontaneously.

Whiteside describes a case in which the handle of a tooth brush introduced through the urethra into the bladder induced symptoms of pregnancy in a young girl. The object had been inserted by the patient in an attempt to overcome urinary retention.

Bigelow refers to a woman who habitually introduced pins and hairpins into her bladder, having acquired this mania after an attempt at dilatation of the urethra for relief of strangury, and Rode records a case in which a woman inserted a hog's penis into her urethra, which was followed by death in five days from septicemia.

Barnsby cites two cases of foreign bodies in the bladder of young girls. In the first the patient had for some unexplained reason introduced a small (Dumontpallier) pessary into her urethra. It became encrusted with calcareous salts and was extracted by a hypogastric incision.

In the second case a hairpin had been inserted into the urethra, one of its points had pierced the bladder wall and caused phlegmonous inflammation of the cavity of Retzius. The remainder of the hairpin served as the nucleus of a large calculus which was in some degree fitted to the bladder (enchatonne), but could not be extracted until broken up by forceps.

Reneaud and Driout refer to a woman of thirty-five who had tried to take her own temperature, and had introduced a thermometer into the urethra. She fell asleep and when she awoke the instrument had slipped into the bladder. Cystoscopy was practiced and a blunt hook provided with a silk loop passed through the instrument. The end of the thermometer was seized with the loop and was removed after dilating the bladder with air. The cystoscope of Luys (a direct vision instrument), was used in this case, and is recommended by the authors in removal of extraneous substances from the bladder.

Reynolds describes a case in which a piece of soft catheter had been retained in the bladder, giving rise to frequency of urination with shreds and pus in the urine, and was finally passed by the patient spontaneously. The piece measured two and a quarter inches in length, and was of the size known as 16 F.

Sacchi speaks of a woman of forty who, having missed menstruation two months, attempted to bring on an abortion. The consequences were illness and perioophoro-salpingitis of right side, treatment for this (and metritis) being followed by vesical symptoms and the discovery of a foreign body, the nucleus of which proved to be a candle! The candle was covered by calcareous matter. Another somewhat similar example is recorded by Pisani.

Dawson relates the history of a girl of twenty who attempted to insert a pencil into her cervix for relief of extreme dysmenorrhea. Instead of the cervix she had introduced the pencil into her urethra and it was later removed from the bladder per urethram. The pencil was four inches in length and of the indelible variety.

Vecki states that a man of sixty-seven for eight years had difficulty in emptying his bladder. Catheterization was practiced for some time, then prostatectomy was performed. Suprapubic drainage had been provided, and the fistula never completely closed. The bladder was absolutely intolerant and had to be emptied every hour day and night, the urine was foul smelling, catheterization comparatively easy, constant pain in bladder; cystoscope revealed extraneous substance.

Suprapubic cystotomy disclosed foreign body, soft at upper surface, stony hard in lower portion, which proved to be a piece of gauze left in bladder from previous operation (ten months before). The bladder had been packed for control of hemorrhage and one of the tampons remained in the bladder. The author states no other instance of the kind can be found in the literature. Erlach records a case in which he found a gauze tampon had by erosion wandered from the abdominal cavity into the bladder after laparotomy.

Morand relates the history of a man sixty-two who introduced into his urethra for a supposed therapeutic purpose a sprig of wheat, which slipped from his hold and entered the bladder, forming there the nucleus of a "cluster" calculus; and Dayot describes a similar formation resulting from the introduction of the stem of a plant.

Barnes was called to see a middle-aged man who suffered from spasmodic urethral stricture, for the relief of which he had been in the habit of inserting a porcelain-tipped hatpin five inches in length. On the last occasion more force than usual being required to overcome the resistance, the point of the pin escaped the man's grasp and disappeared. Barnes saw the patient thirty minutes afterward and discovered the point of the pin within the urethra at the junction of the penis and scrotum, the head of the pin being in the bladder. By introducing a finger into the rectum the point of the pin was brought out through the perineum, then being turned head foremost was thus removed per urethram. The only injury inflicted by this maneuver was the small perineal puncture.

Greene gives details of a case where a lead pencil six

and one-half inches in length was introduced into the urethra and remained nine days, ulcerating into the left ischio-rectal fossa and producing extensive urinary extravasation throughout the perineal and pubic regions. Operative intervention disclosed point of the pencil two inches anterior to the anus.

Dorr speaks of a man who passed into his urethra a piece of chewing gum that required suprapubic cystotomy for removal three months after its introduction. In an example recorded by Peters a man of thirty-five complained of retention of urine, which he stated was due to the presence of chewing gum in his urethra. A nodular mass about an inch long could be felt at the bulb. This was broken up with sharp uterine curette, and found composed of chewing gum coated with phosphate of lime. The foreign body had remained in the urethra about two months.

After calling attention to the case of a hairpin in the bladder which he had extracted after vaginal cystotomy, Picque reports two examples in which extraction was made through the urethra.

An epileptic woman of thirty-two was taken with a fit while scratching herself with a hairpin. The two points were seen by her husband, but they subsequently disappeared toward the bladder. Four days later under chloroform the urethra was dilated; the pin was felt by digital examination, was turned until the convex end pointed toward the urethra, and withdrawn in that way.

A girl of twenty had introduced a pin into her bladder several days before being seen. The urethra was dilated, the pin was felt by a finger inserted into the bladder, was turned so that its convex extremity pointed into the urethra, and was then forced out between the finger of one hand introduced into the bladder, and that of the other into the vagina.

Pozzi calls attention to an ingenious instrument invented by Collin by means of which the points of pins are seized in a cannula. Guinard claims he successfully relieved one case by means of a button hook. Auvray speaks of a woman twenty-three who presented for treatment twenty-four hours after she had passed a hairpin into her bladder. She suffered pain in hypogastric region and was able to stand or walk only with difficulty. Urination caused great discomfort, hence the bladder was markedly distended. By vaginal examination, supplemented by sounding, it was found the pin lay transversely upon the lower bladder surface immediately behind the urethral orifice. The rounded end was to the left and the sharp ends were probably driven into the bladder substance since the pin could not be moved by the sound. By means of the hook devised by Collin, and a finger in the vagina, the pin was seized (without use of choloroform) and withdrawn.

In a case where operation was demanded for removal of a douche nozzle from the bladder of a young woman, Legueu employed an infrapubic incision, separated the urethra from the symphysis as far back as the bladder, incised the roof of the urethra, dilated the vesical sphincter, and easily extracted the foreign body. A single suture served to restore the urethra, after which the urethro-vaginal flap was replaced and sutured. It is claimed if primary union fails to occur after the infrapubic operation, fistula does not result.

The advantages claimed for this operation are: (a) ease of performance, (b) minimum amount of shock and traumatism, (c) absence of conspicuous scar, and (d) prevention of serious sequelæ. It is said this operation is particularly serviceable (1) for calculi not amenable to lithiotrity (especially in women with thick abdominal walls), and (2) for extraction of foreign bodies which cannot be removed through the urethra.

Legueu and Cathelin (Tribune Medicale) suggest a similar operation for removal of calculi in old men. In operations upon the cadaver they have been able to extract calculi "size of small nuts." This incision permits of thorough digital exploration of the bladder, no important organ need be cut, and the bony attachments of the corpora cavernosa can be preserved, according to the information given by the authors.

As the majority of the examples herein cited have heretofore appeared in medical print, the writer desires to express his thanks to both authors and publishers for the privilege of excerpting and epitomizing the same.

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All renal and splenic infarcts of the dog are first hyperemic, then hemorrhagic, and finally pale from coagulation necrosis; so H. T. Kassner and J. H. Austin have found (J. A. M. A., Sept. 16, 1911). The hyperemia of the early infarcts is, in a general way, proportional to the vascular pressure within the organ as a whole, and not due to reflux of blood from the veins. Conglutination of the red blood corpuscles is the earliest demonstrable change in the blood of the infarct, removal of pigment from the infarcted area is probably due to plasmatic diffusion; definite fibrin formation appears relatively late in the course of the condition. Necrosis progresses more rapidly in infarcts in those organs in which the general circulation is altered in some way (from damming back of blood by vein ligation or from cutting down arterial supply) than in organs in which the general circulation is normal. The pallor of the white infarcts is due to decolorization of the contained conglutinated and coagulated blood; decolorization begins in a general way in the middle of the infarct and extends peripherally. Organization progresses as well in organs in which the general circulation is diminished as in those in which the general circulation is normal. Regeneration is seen, in the kidney, only in the occurrence of mitotic figures in the epithelium near the margin of the infarct; it is diminished by any decrease in the general circulation. Regeneration of the cells of the splenic pulp or follicles is not demonstrable previous to, or at the end of, one week.

Bilateral, large, (Am. Jour. of Surg.) smooth swellings of the tonsils should arouse the suspicion of Hodgkin's desease.

Wounds, unless they suppurate very freely, are generally cleaned too often, considers L. Sexton (Texas Med. Jour., January, 1911). Peroxide of hydrogen injected into cavities and sinuses often carries the infection further into uninvaded tissue; this medicament is also too strong to apply pure to newly healed tissue. Sterilized gauze, without dusting powder, is sufficient protection for any clean surgical wound. Sterile water, saline solution or a very mild antiseptic should always be preferred to the stronger antiseptics; the latter in destroying the pus cocci, at the same time destroy the new epithelial tissue by which granulating wounds are covered. There is no better protection against infection than the free application of large sterilized pads or dressings, with which they should abundantly covered. Absolute physiological rest by a properly applied splint, or confinement in bed, is a great time saver in the healing of wounds. Silkworm sutures are much less likely to produce stitch abscesses and should be given the preference over catgut whenever practicable. Zinc oxide plaster should be widely used. In redressing wounds all materials should be thoroughly softened by warm sterile water before the dressing is removed.

Hydrocele.—J. R. Alvarez (Am. Jour. Surg., May 1911) describes three operative measures: (1) The simple incision of the tumor (Volkmann's operation); the tumor is laid open, the cavity is irrigated with a 3 per cent carbolic solution, the edges of the serous membrane are sutured to the margin of the scrotum and the cavity is packed with iodoform gauze until it closes by granulation. The disadvantages: This operation frequently fails, either from some patch of the serous surface not being destroyed and covered with granulations or from a diverticulum being overlooked, or in cases of communicating hydrocele when the openings are imperceptible. Besides, if one is rigidly aseptic he may fail to obliterate the sac; one does not know how "septic" he should dare to be. No operation, indeed, should be done, no matter how trivial, where there cannot be the strictest asepsis. (2) The eversion method (Jabonlay's operation) requires an incision down to the sac (and if this is too large a portion is excised). The sac is then everted; one or two sutures fix it behind the testicle; the skin is then closed over. The disadvantages of this operation: The everted serous membrane may continue to secrete and the fluid dribble out through the skin wound; or the function and nutrition of the testicle may be interfered with. (3) Complete removal of the serous membrane (Bergman's operation) never fails to cure; the operation is easy; it keeps the patient in bed less than any of the two preceding methods, and it does not interfere with the nutrition or function of the testicle. Besides, in cases complicated with hernia or varicocele, these affections can be attended to at the same time. We incise the tumor until fluid escapes, and then we peel off the serous coat from the fibrous until the edge of the epididymus is reached and all the secreting surface is removed; then everything is resected. All the bleeding points must be ligated. A strip of rubber tissue is then inserted to drain the cavity, which is otherwise closed with plain catgut, preferably in two layers. The patient is allowed to sit up for five days and to be out of bed in seven, wearing a snug suspensory bandage. There should be very little reaction. If more than one sac is discovered it is treated in like manner. Should hernia or varicocele exist they can be dealt with in the same way.

Anterior Poliomyelitis, states a circular of the American Orthopedic Association and the American Pediatric Society is (so far as known) a communicable disease, being communicated from one person to another, and also by means of a third person. It occurs in epidemics and tends to spread along the lines of greatest travel. It is prevented from spreading by quarantine, and by reason of the very great prevalence of the disease in the summer of 1910, it should be made a reportable diseases in all states, in order that its presence may be detected and its spread guarded against. Especially significant are the so-called abortive cases, where indefinite ailments occur in children in communities where frank paralysis exists. These abortive cases are undoubtedly a source of infection, and their record and study are of much importance. In a community where cases of infantile paralysis occur, cases of illness with sudden onset of fever and meningeal symptoms should be closely watch and regarded as possibly infectious. In such cases even recovery without paralysis does not establish the fact that the case was not abortive infantile paralysis. All cases of this disease should be strictly quarantined, sputum, urine and feces being disinfected, and the same rigid precautions being adopted as in scarlet fever. This quarantine should last four weeks, in the absence of definite knowledge as to when the infection ends. Children from infected families should not be allowed to go to school until the quarantine is abandoned. The transportation or transfer of acute cases in public conveyances should be strictly forbidden. It would be very desirable to adopt provisional quarantine measures in suspicious cases in a community where an epidemic prevails. The report of all cases to the public health authorities should be enforced by law, and all deaths from this cause should be properly described and registered. A careful study of epidemics by health authorities is strongly advised.

Diphtheria Carriers are found at all ages and of either sex, states A. S. Macdonald, who has studied the records of ninety such cases (Lancet, March 25, 1911). The previous carrier period cannot be ascertained, but may in some cases be inferred; nor can it in many cases be said that one is derived from another. The presence or absence of an obvious pathological condition is no criterion of the fact of a carrier, of the length of carrier life, or of virulence. The length of carrier life seems to have no effect on virulence. Carriers are found amongst those most intimately associated with other carriers or cases. The control of diphtheria (assuming control of the case) depends on the control of the carrier. The carrier should be notified as a case of diphtheria, no matter of what age or sex; and due quarantine and observation should be maintained until satisfactory demonstration of the disappearance of the B. diphtheridae. As everything points to the conclusion that this bacillus is essentially a human parasite, a determined attack on the lines of thorough bacteriological investigation should have no difficulty in stamping out diphtheria altogether. Evidence points to the slow, inevitable, mechanical distribution of the disease, which persists endemic in the undiscovered carriers. Epidemicity depends entirely upon the number and nature of the carriers.

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THE MEDICAL TIMES CHANGES HANDS.

AFTER many years of pilotage of THE MEDICAL TIMES, the editor, Dr. Hills, begs to announce that he relinquishes the tiller with the issuance of this number. He has disposed of this publication by sale to Romaine Pierson, of 108 Fulton Street, New York, who for some time past has acted as the publisher. For the new owner are besought the co-operation and support which have been extended to the retiring owner and an ever-increasing measure thereof which his known ability and progressiveness warrant. In confiding the fortunes and destinies of the MEDICAL TIMES to the control and guidance of others, it is with assurance that they pass into hands well equipped by training and experience to win large and lasting success. Mr. Pierson has had long and broad tutelage in the production of medical and pharmaceutical journals, from the counting room side thereof. He was for years an officer in the corporation owning and publishing the *New York Medical Journal*, figuring in that journal's purchase and incorporation with itself of the *Philadelphia Medical Journal* and the *Medical News*. His pharmaceutical journalistic experience covers a quarter of a century, with the *Pharmaceutical Era*, *Druggists' Circular*, *American Druggist*, and for two years past, as owner and publisher of the *Practical Druggist*, the latter having been brought in a brief period to a leading and commanding position. The writer severs his long-maintained relations with his readers and supporters with a great measure of regret. He realizes, however, that larger and better things are in store through the infusion of new blood and energy. The journal will have the assistance of a well-equipped and experienced corps for all departments, and it may confidently be expected that the MEDICAL TIMES will renew its youth and render even more satisfactory service to its clientele.

ALFRED KIMBALL HILLS, M.D.

It passes to its new management with the close of this, the fortieth, year of its existence.

THE SPIRIT OF SCIENCE.

THE spirit of science, having for its ultimate object the welfare of the race, is as essentially self-abnegating and altruistic as is that of religion. The religious martyr is extolled in many a volume, in many a pulpit. On the other hand only the great names in science are known to the world; thousands of her votaries have delved and sown and sweated blood; full many such an one has given his whole life to establish a fact or even only a detail or an item to a fact, his industry unrecognized, ridicule, or persecution indeed, oftentimes his only recompense, his life lived perhaps in the pitifullest destitution, ignored in his day, and to-day altogether forgotten. In the present era, observes *Scientific American*, the practical and material gains which are brought to the community and to the individual by the advances of science are so obviously and so constantly presented to our minds that the promise of such material rewards might seem to the casual observer to be the leading motive for man's endeavor to fathom the mysteries of nature. Something of this sort, indeed, has recently been intimated; it has been declared

—we hope, at best the statements are exaggerated and the instances few—that scientific gleanings, which would benefit the race, have been withheld indefinitely and kept secret, under the dominance of mercantile interests; that to this nefarious end the gleaners have been compensated not only for their industry (for which no fault can justly be found) but also in order to the concealment of their discoveries. It is the latter consideration which is reprehensible and inimical to the true scientific spirit, and it is to the glory of our profession that no such intimations appear to have been made regarding the medical scientific field.

The history of science in the past gives no such impression of venality; not only (observes our contemporary) have most of the great pioneers followed their light in large measure regardless of any consideration of personal gain of a material kind; but quite on the contrary we need only turn to the records of mediaeval history to find the martyr of science driven by the spirit within him to seek the truth at all costs, and to proclaim it though his reward be torture and death at the hands of the inquisitor. No prospect of gain will make one willing to suffer and die for the truth—but rather the sublime gratification, the exalted ecstasy that comes with revelation of truth to the master mind.

Few among us are privileged to experience "das Heldengluck"; yet few indeed are without the elemental impulse to fathom the problems of existence, the "child-wonder" born with and in us (woe to him, said Carlyle, who hath it not), becomes strengthened rather than mitigated as the normal being matures; and that existence were indeed dreary from which this wonderment concerning the cosmos should depart.

To the investigating mind the first gratifying step has been taken when, through one circumstance or another, the veil is lifted and a gleam of understanding lights up the mental sight to a comprehension of the phenomena that at first merely awe; here is pre-eminently the pleasure of the neophyte in science, whose personal knowledge can as yet be readily extended by the comparatively easy means of imparting to him the knowledge gained by others. Such in our profession would be the status reached by our fledgling brethren who have recently been graduated. The scientist now passes by unperceptible steps to the next stage of his development —that in which he tastes the joy of discovering by his own efforts, new truths; some come early upon this stage, others not until but a silver fringe remains along the occiput; others, alas, come upon it not at all. Many, indeed, even with training especially directed toward the development of the prescient faculty, will hardly, (howsover much they try) do more than add some material upon which the more fortunate (though not the more zealous) can base discoveries. All, however, make important additions to the scientific thesaurus, the contribution of the item to a fact being ever essential to the building up of a great truth.

A noble complement of the scientific spirit is the sense of mastery over nature that follows upon the successful application of scientific knowledge—to the furtherance of human welfare; as when Pasteur gave into our hands a means by which to remove the dreadful infections of the past from human experience. Herein we find it demonstrated that man is after all a coefficient (powerful in so far as he recognizes and realizes himself to be such) in the working out of his own destiny.

Finally, it seems to many, that science is without imagination. This is quite an erroneous impression; imagination (the fuel of genius) is most essential to the evolution of scientific discovery. We measure and weigh, we are constantly surrounded by the limitations imposed by the experience of our senses; we seek causes for observed effects, or we determine the effects resulting from given causes; the tendency is toward the material rather than the metaphysical for us; "give me practical things," we hear a colleague say. "I want nothing to do with theories"—a narrow view; pretty much all in practice has been developed from well-grounded and demonstrated hypotheses; nor, with all our collected data, shall we achieve any great discovery without the imagination brought to bear. Many observed an apple fall and assumed without much thinking it was because the stem became too weak to hold it; this conclusion sufficed until a man with an imagination in good working order came along, observed the phenomenon, and reasoned out from it the law of gravitation. A small measure of success is achieved by doing the traditional things; some inventions are accomplished by chance; some benefits fall to mankind by a stumbling footstep; but most of the scientific blessings vouchsafed us have been received through the efforts of the seer—the discerning, imaginative man—in science.

Tuberculosis Notes.—Make an early diagnosis. Teach the patient to be clean and that it is criminal to spit promiscuously. Curable cases can be cured at home. Absolute rest is essential; also pure air. All the food the patient can assimilate. No drug or combination of drugs will in itself cure consumption, drugs are but an adjuvant to the cure.

Tuberculosis Increase.—The recent report of the president of the Hebrew Charities showed an increase of from 14 to 20 per cent. in the victims of tuberculosis among working people. It is observed that whatever may be its origin, there is no doubt that overwork, congestion and undernourishment form soil on which this disease thrives. Factories must be made sanitary, tenements must be made habitable, children must be given room to play, and men and women must not be overworked and underpaid—otherwise society in all its strata will have to pay the penalty.

BLACKWELL'S ISLAND.

IT has recently been proposed, in a spasm of mushiness such as seizes upon the people of this cosmopolitan community at not infrequent intervals, to change the name of Blackwell's Island to "Hospital Park" or some other name that will remove the stigma which has been created by the long association of the Island with the County Prison. It would seem as if this change will be inevitable—that is, if the spasm above mentioned does not speedily get itself aborted. For at a recent "amateur referendum" some 30,000 votes were cast in favor of the change, sanity in the premises being represented by 600 votes in the negative, which we now modestly beg to increase by one vote. There are thus at least 601 individuals who would retain the fine old name of Blackwell for that picturesque and extraordinary island in the East River, which never ceases to engage human interest.

There is a prison and a workhouse on Blackwell's Island, but there are several other institutions besides, at least equally beneficent and salutary, and which merit no stigma of any kind. The change of name seems to be destined mainly in deference to "the sensitive feelings" of the worthy sick, poor and destitute, whose circumstances require their going for treatment or care in the evening of their lives, to those latter, non-penal institutions. But those (such as physicians) who have served in these hospitals and almshouses, have hardly found much of the prejudice stated to exist on the part of the suffering and the destitute; they have been too sick and too miserable, and too subconsciously endued with the dignity of poverty to consider the juxtaposition of any reformatory institutions. Besides, there are many among the world's "submerged strata," as represented in great cities, who have a deep-marked impression that all the people with criminal tendencies are not to be found inside prison walls! It is not the city's poor who are thus soft-hearted and namby-pamby; but those dilettante and superficial folk who assume an understanding of the poor, such as is the possession and privilege of those only who have tasted the bitterness of poverty. Those who must go to Blackwell's Island need no more feel ashamed of the purely incidental vicinity mentioned than need the Auburnites or these halcyon dwellers in Ossining-on-Hudson.

Besides, structures or institutions of any kind, public or private, are comparatively short-lived in New York; as in all gigantic communities the characters of localities are constantly changing. Moreover, should such a name as Hospital Park, for example, be adopted, the matter would not be much helped; for, by the inevitable principle of connotation in logic, the term would inevitably, and in very brief season, come to suggest the contiguity of a jail (wherein it is hoped to heal human immorality) to the hospital wherein it is hoped, with considerably more promise of success, to heal human diseases. For example, certain finicky suburbanites succeeded in getting Sing Sing, the name of their town, changed to Ossining (in addressing please don't forget to add "On-Hudson"). But the change hasn't helped the matter in the slightest, for, whereas formerly everyone knew of Sing Sing as the place environing a jail, everyone has by now, precisely as before, come to know that Ossining (On-Hudson) is the place where that same jail continues to be. The idea of a jail smells as bad under any name that can be devised. And the only way to rid the upright portion of the Ossining (On-Hudson) portion of the community is not to change the name of that beautiful town (which really has many other attractions and "points of interest" besides the jail), but to remove the jail to some other place.

For such reasons let us hope Blackwell's Island will retain the name which it has held since the tomahawk was buried, the pipe of peace was smoked and twenty-five dollars was accepted by its aboriginal owners from the original Blackwell in lieu of all future claims to its possession. Let us be patient. Such are the civic transmutations referred to, that objectionable institutions like jails may in the near future be removed from Blackwell's Island. Indeed it would seem that soon (like that famous non-existent core in the apple) there ain't agoin' to be no more jails; the employments upon which constabularies and courts now fatten bid fair to be relinquished in obedience to the dictates of the alienist, the psychologist and the physiological chemist. Are we not already substituting optometry for trial by jury, trepanning for electrocution, the rest cure for him who has been cutting up his mother-in-law, and the like!

Chronic Cystitis in Women.—H. D. Beyea (International Clinic) confines the patient to bed, interdicts all stimulating foods or drinks, and prescribes an exclusive milk diet where the physical condition permits. A pint of flaxseed tea daily is an excellent old-time remedy for making the urine unirritating. For an acid urine 10 grains or more of potassium citrate are given, the dose being diminished as the urine becomes alkaline. Helmital (gr. xv tid.) has a bactericidal effect. Where the urine is from the beginning alkaline boric acid is most useful, at first 10 grain doses, later 5 grains. Should no improvement follow after a few days' treatment the bladder must be irrigated daily, using a medium size soft rubber catheter attached to a small glass funnel by means of a rubber tube and a piece of glass tubing, the whole being about three feet long. We first nearly empty the bladder through the catheter and funnel, then fill the latter with a sterile dram to pint tepid solution of boric acid, and repeat gentle washing until fluid comes away clear, not allowing air to enter the bladder in the process. Then we instill an ounce of silver nitrate solution (gr.ij.—℥i.) and this remains two or three minutes. Intractable cases are usually by reason of indolent ulcers, which can ordinarily be cured by a single cystoscopic application of a strong silver nitrate solution (gr.x.-xx. to ℥i. aqua).

CHOLERA AND CHOLERA CARRIERS.

IT has been most agreeable to contrast the popular attitude of to-day toward the Asiatic Guest with that which formerly obtained. New York City was two generations ago so desolate by reason of a cholera invasion, that grass grew in Broadway, the main thoroughfare. Less than a score of years ago there was a like pathophobia, when the profession's income was handsomely added to by consultations in which terrified people sought to be assured that their symptoms were imaginary. Nowadays there would be no such terror; there was none the past summer, although the disease entered the port of New York and the metropolis. It was then promptly detected and held in check; nor was anyone in doubt that the situation was fully under control. No well-balanced mind this side of the pond now fears the cholera, and for two reasons:

Firstly, there is adequate public faith that our health authorities, National, State and Municipal, are fully alive to their responsibilities; and that they are amply and adequately able to protect the American people. Again, our profession has demonstrated beyond peradventure that cholera is purely and simply an ingestive infection; that it is contracted solely by means of food or drink, or infected things taken into the mouth. And this conclusion has been so zealously disseminated by the press that it is perfectly comprehended by the laity. The old vague, mischievous notions of cholera—that it is an air-borne infection, that its fatal properties lie hidden in fomites, that it is transmissible in other mysterious ways—are dissipated; one does not now fear that the lethal agency is conveyed for great distances through the air, and that simply to pass by a house in which a cholera patient is stricken, might infect one with the disease; one does not now imagine a titanic hand from behind a cloud laying the scourge upon a perverse generation, or a Wandering Jew scattering the seeds of cholera in his path. The laity now knows from us that this disease, while as dangerous as ever, to those who have acquired it, is communicable only in easily preventable ways. It was a demonstration of that knowledge, rather than an exhibition of heroism, which Mayor Gaynor gave, when he visited cholera patients in hospital.

A striking incident confirmed scientific teaching and coincidently illustrated the mischievous effects of the lack of it, or of lack of faith in it. Two cases at Bellevue were at first supposed by some to be of cholera; the patients themselves seem to have believed that they had the disease, and they did manifest some symptoms of it. But examination of the stools proved there was no cholera at all; these patients were simply suffering from exaggerated fear of the disease, and were illustrating the fable anent the Plague and Fear. They indeed became seriously ill, and might have died had their fears been encouraged rather than allayed. In former years (and indeed up to quite recently, as we shall note) many took sick and many others died, not of cholera, but of the fear of cholera; and this tended to establish false notions regarding its contagiousness. The sufferings of these two Bellevue patients suggest what thousands might to-day be enduring, were it not for the general prevalence of better knowledge or of faith in the knowledge now established by medical science. It is probable these two Bellevue patients would not claim to be of heroic mold, yet heroes have behaved no better than they. In St. Petersburg, a year or two ago, something of comic relief was injected into that city's annual cholera tragedy by the behavior of certain of those military heroes who had shortly before so conspicuously proved their Martian virtues in Manchuria against the Japanese. The prostration of these gentry (simulative of real cholera) was extreme; however, their reflexes (due to "nervousness") were found upon bacteriological examination to manifest, not cholera, but only the fear of cholera—nothing, in such men, but just contemptible cowardice.

As regards cholera carriers: The government has now ruled that every immigrant from a cholera infected country shall have the stools examined for the vibrio. This ruling, which seems at first startling, is necessary, and just by reason that we now know there have been a number of "cholera carriers," themselves approximately in perfect health. Through such procedure may satisfactory explanation be had of otherwise incomprehensible outbreaks.

The similar status of the typhoid carrier is now well understood. Since of the case of "Typhoid Mary" was discovered, scores of others have been come upon. This cook never had typhoid, yet, year after year, during those peregrinations from household to household which are characteristic of cooks, she infected many people in a number of households. In another case the carrier was found to have typhoid bacilli fourteen years after he had been subjected to the infection. Undoubtedly there are perfectly healthy carriers of other infections, as of cholera, which is like typhoid essentially an ingestive infection. Such carriers have probably always existed, and have oftentimes originated pestilences despite the precautions of health officials. No doubt quarantine authorities have frequently been blamed for negligence in letting the sick slip by them, when they had only failed to detect in those presenting no symptoms of the given disease, and whom there was at that period no reason whatever to suspect as conveyers.

The health officer must now, in the first place, detect the cholera carriers; this can be done only by a bacteriological examination in the case of every one, well or ill, on board a vessel from a stricken region, in accordance with the government order. The second and

even greater task lies in dealing with such persons after they have been detected as cholera carriers; how long are they then to be detained? Plainly, it were impossible to incarcerate all such people indefinitely; our authorities have not here to deal with patients actually sick, who are isolated for the brief period of the incubation—which is now extended from five to ten days. Herein seems to lie the greatest perplexity—as indeed the only remaining one—in cholera quarantine; and until this perplexity has been adequately dealt with occasional quarantine failures must not be reprobated.

NATURE'S BALANCES.

BIRDS have been held of great value in that they destroy vast numbers of disease-conveying and otherwise obnoxious insects. In the *Scientific American,* J. N. Baskett attacks this connection, believing that all avian efforts have no appreciable effect in keeping down the infinite numbers of insects which are, if nothing else, injurious to crops. His point of view, however, is not so definite regarding such insects as the mosquito, which is a disease-propagator. The veteran naturalist, Alfred R. Wallace, in his book, *The World of Life,* gives proof of the avidity with which many kinds of birds devour mosquitoes. These insects are generally associated with the swamps of the tropics and of the temperate zone, but their fullest development is in the icy plains of the Far North, where, during the summer months, swarms of them often obscure the sun, like a dense thundercloud. In those regions mosquitoes supply abundant food to the millions of migratory birds which go thence to breed in the summer season. The birds have but to open their mouths to fill them, and the appetite of their most voracious offspring is easily satisfied. One naturalist took more than a hundred mosquitoes from the throat of a night hawk, that was carrying them home to feed its young. In these circumstances one would find a fresh argument for the conservation of bird life in our latitudes. Especially should our shore birds be protected; this is the plea advanced by W. L. McAtee,* of the Bureau of Biological Survey of the United States Department of Agriculture, who states that many species of our shore birds eat disease-disseminating mosquitoes. Fifty-three per cent of the food of birds of one locality was found to consist of mosquito larvae; among such insects was the salt-marsh mosquito, for the elimination of which much money and energy has been expended in New Jersey, at least. Cattle and other valuable live stock are also greatly molested by horse-flies as well as by mosquitoes and other insects. Adults and larvae of horse-flies have been found in the stomachs of several kinds of our birds. The killdeer and the upland plover devour the North American fever tick, which so greatly injures cattle. Shore birds devour the larvae of crane-flies, which insects are oftentimes most destructive in grass lands and wheat fields; these birds are also very fond of grasshoppers, which destroy great quantities of corn, cotton and other crops. In Nebraska 23 species of shore birds were found to have fed on Rocky Mountain locusts, which are great grain consumers. Some of our insect pests occasion severe economic losses in forage and grain crops; these insects are the natural food of shore birds. The army-worm, cut-worm, cotton-worm, tobacco-worm and potato worm are devoured by the avocet, woodcock, pectoral and Baird sandpipers, upland plover and killdeer. Birds thrive on many beetles which would otherwise destroy crops. The boll and the clover-leaf weevil are food for the upland plover and the killdeer, the rice-weevil for the killdeer, the cowpea weevil for the upland plover. Crayfish, which are a pest in Southern rice and corn fields, and which injure levees, are a favorite food of the black-necked stilt, jacksnipe, robin snipe, spotted sandpiper, upland plover and killdeer. In Texas, continues McAtee, the upland plover follows the plough and eats grubs destructive of garden stuff, corn and cotton crops.

In these premises one may well regret that throughout our Eastern States shore birds are fast vanishing. There are more than sixty species in North America; though they frequent the shores of all waters, large and small, many of them are equally at home on plains and prairies. Many species formerly swarmed along the Atlantic coast and in our prairie regions; so scarce have they become that their extermination now seems imminent. The black-bellied plover years ago was very numerous along the Atlantic seaboard; it is now but a straggler. The golden plover is now rare, though it was once abundant east of the Great Plains. Great flocks of long-billed dowitchers formerly wintered in Louisiana; several in one flock are now but occasionally seen. The Eskimo curlew seems to have been exterminated in the last dozen years; and other Eastern species are greatly reduced.

In fall and winter these birds are shot in great numbers along the route of their north and south migration. They decoy readily and persistently, despite most destructive volleys. The breeding grounds of some species have become greatly restricted by the extension of agriculture in our regions; and no doubt their winter ranges in South America have in like manner been restricted. In several other ways pointed out by McAtee is their perpetuation made most doubtful whilst their present existence is extremely precarious—an unfortunate circumstance, for more than those birds.

*Our Vanishing Shore-Birds. Circular 79.

When performing lateral anastomosis (Am. Jour. Surg.) after intestinal resection, make the opening reasonably near the closed ends. Long blind pouches may give trouble.

THE MEDICAL EXPERT.

UNDOUBTEDLY the method now generally prevailing in the United States of presenting expert testimony in the trial of criminal cases is imperfect; moreover, this method has tended to bring the medical profession into disrepute with the public and with the courts and the bar. And yet the fault lies by no means entirely with us; and Dr. Carlos M. MacDonald, in a noteworthy address at the recent conference on Reform of Criminal Law and Procedure in Columbia University, has distributed the blame much more equably than is generally done.

The causes of the evils inherent in our present methods of medical expert testimony lie: First in the usage of the courts, which permit of the selection of experts by counsel, without regard to their qualifications or professional standing, usually the only requirement being that the expert so selected shall be willing to give an opinion in favor of the side by which he is retained; and second, in the absence of any standard of qualification, fixed by the medical profession, as regards special study and experience in a given branch of medical science—such a standard as would (at least theoretically) render the would-be witness sufficiently skilled in that branch or subject to justly constitute him an expert.

As regards the first evil here pointed out: Dr. MacDonald would have the expert selected in each case by the court; and (he observes) "while it might occasionally happen that a judge, in selecting an expert or experts, would be influenced by other than meritorious motives, I think, as a rule, the courts could be relied upon to appreciate the responsibility." Here, we fear, not all of our readers will find themselves in accord with Dr. MacDonald. The selection of our judges is oftentimes conditioned upon the exigencies of municipal politics, and taking these United States by and large, our municipal politics are perhaps the most corrupt in all our political system. In these circumstances one would by no means always be assured the selection of the wisest, the most scientific, the most judicious and the fairest medical expert. Be this as it may, Dr. MacDonald considers the very fact that the experts had thus been selected by the courts would tend to give dignity to their position and might to their opinions; they should be permitted free access to all the evidence in the case; they should examine the accused; and then they should state their opinion, orally or in writing, subject to cross-examination, which should be limited to the matters embraced in the opinion. Their compensation should also be fixed by the court at a rate per diem, or by fee, which remuneration should be sufficient to induce qualified men to accept such service.

Respecting the absence of any standard fixed by our profession, by which the qualifications of a member to be an expert may be determined, the remedy lies entirely in our hands; we should fix a standard of qualification, based on special study and experience in a given department of medicine, which standard shall entitle a physician to rank as an expert in that special department; and our profession should at the same time put its condemnatory seal on the now too frequent practice of physicians posing as experts upon subjects respecting which they have no special knowledge or experience, "relying upon their wit and the ignorance of counsel in medical knowledge to save them from exposure."

It has been suggested that the most satisfactory way to deal with criminal cases (especially in capital crimes) in which insanity is pleaded as a defense, would be to keep the question of mental abnormality out of the case entirely during the trial, and to allow the jury to pass only on the question of the guilt or innocence of the accused, irrespective of his mental condition; then, if the defendant is convicted, to let the court, either of its own volition or at request of counsel, appoint a commission of competent alienists to determine his mental condition. Dr. MacDonald does not know if this method would be possible, but it would at least seem to offer an improvement on the present method of determining the mental condition of a defendant, a method which puts upon a layman jury (men unfamiliar with the phenomena of mental diseases) a responsibility which they should not be called upon to assume. The Thaw trial, for example, would have occupied but a few hours if the question of that defendant's mental condition could have been excluded from the consideration of the jury and left to the determination of the court, aided by a commission of competent alienists. A few days at most would have sufficed for the latter inquiry; and the result would have been precisely the same as was reached after two ridiculous and revolting trials which lasted many weeks, at an enormous expense to the family of Thaw and to the State.

Dr. MacDonald would hold our profession to its duty to protest most vigorously against the tendency which has of recent years been cumulative, to heap upon our expert colleagues ridicule and abuse because "doctors disagree," and to hold that substantially all medical men who dare take the witness stand are dishonest. As a matter of fact medical men are as little apt to disagree as any other class of men, when matters of opinion are under consideration. Lawyers, for example, are notorious for their disagreements (as for quite a few other peculiar things). In every case tried in court the contention of counsel on one side is diametrically opposed to that of the other; and this, too, on substantially the same state of facts. Nor are judges less noted for their disagreements; the higher courts frequently reverse the lower courts, quite up to the court of last resort; and one may safely say that if there were a still higher court it would be found overruling the Court of Appeals. Worse

than this—how frequently do we find the body of judges constituting the Appellate courts divided in the decisions they render, the issue being decided oftentimes by a bare majority of one. And who, pray, would think of intimating dishonesty in these judges simply because they happen to disagree!

THE BINET TEST.

DR. M. S. SCHLAPP recently made what is reported to be the first practical trial of the Binet test for defective children by any metropolitan public institution, and as a result a 14-year-old boy, who had been arrested on the parental charge of associating with juvenile thieves, was sent to a farm instead of being committed to the School for Feeble Minded Children on Randall's Island.

The boy, Andrew Bianco, was in really defective rather than criminal; he appeared by the Binet test to have the mind, not of a boy of 14, but of nine years. Dr. Schlapp asked him the scientifically graded questions which the French surgeon and alienist formulated. For example, a normal child at three should be able to answer intelligently such questions as "Point to your nose, eyes, mouth." "Repeat: 'It rains,' 'I am hungry!' " "What is this a picture of?" "What is the name of your parents?" The scope of the questions then widens year by year; we here but illustrate. At the age of four the normal child should distinguish between lines of different lengths; at five between objects of different size but of different weight; at six he should know the difference between his right and left hand; at seven the value of coins; at eight he should be able to tell the difference between a butterfly and a fly, wood and glass, paper and cloth, to count backwards from 20 to 1, to name the days of the week in ten seconds, and count three one-cent stamps and three two-cent stamps in ten seconds; at nine he should make change correctly, and so on.

Andrew Bianco did very well through the eight-year questions. Then he was asked as for a normal nine-year boy. To make change of 20 cents, and of 4 cents. This he could do; but he could not describe a fork, a table or a chair; he did not know what the date was; he could not name the months of the year in fifteen seconds; he could not arrange weights of different sizes in their proper order in one minute. When asked the questions for a normal ten-year-old child, such as to identify a cent, a nickel, a dime, a quarter, a half-dollar, or one, two, five or ten dollar bill, he could not answer correctly; nor could he construct sentences containing the words "Philadelphia, money or river."

Dr. Schlapp thereupon reported the boy, though 14 years old, to have the mind of a normal boy of nine years. Justice Russell of the Children's Court, then upon this report, concluded Andrew to be neither criminal nor idiot. An officer of the Children's Society, which had him in charge, hoped this Binet test would in the future prevent the mistake on the part of the authorities, of treating a merely defective child as a criminal or an idiot; that there would be in time a central institution in New York City where defectives may develop their backward minds, and, by learning simple trades, become self-supporting, and that even children of mentality 75 per cent below normal may, by proper training, develop a very fair intellect.

The Binet system has, however, not escaped criticism. Professor Lugaro, of Modena, considers the selection of questions arbitrary; and that it would be difficult to persuade all observers to adopt a uniform method. And Lugaro prefers the procedure of the Kraepelin school, in which the several psychic functions are examined by comparatively simple means. "The capacity to receive external impressions, active and voluntary attention, the memory both in connection with the conservation of old and the power to fix new records, the promptness, the richness, the contents of the associations which are provoked in the simplest way possible by words heard or by objects seen, the quickness with which voluntary impulses are determined, the attitude towards protracted labor, and the like, are the objects of special study."

Yet, observes the *Institution Quarterly*,* the Binet test does give valuable results. Although some of the questions asked seem to draw out the amount of teaching the child has had at home (as the days of the week, the months of the year, and the like) rather than his capacity, the classification by this system nevertheless corresponds very closely with that of observation. Pupils do not grade so high by it as one might otherwise place them. It should be supplemented by other physiological and psychological laboratory tests.

Perhaps the greatest benefit to be had from its general use would be its application to institutions other than schools for the feeble-minded. The average mentality of children under institutional care in homes, asylums, orphanages, and markedly in reformatory institutions, is below any normal standard. The Binet system affords a rude measure of the amount of such defect. Despite its lack of precision, the readings are substantially uniform; so that the grading in different institutions admits of ready comparison and is sufficiently accurate for practical use.

In suitable cases excision of the tract (Am. Jour. Surg.) of a fistula in ano may result in a speedy cure. Persistence of the fistula may follow the operation, but so may it follow the slow healing procedure of free incision.

*State of Illinois: Board of Administration, June, 1911.

BIBLIOGRAPHICAL

Operative Obstetrics, including the Surgery of the Newborn. By Edward P. Davis, A. M., M. D., Professor of Obstetrics, Jefferson Medical College, Philadelphia. Octave volume of 483 pages, with 264 illustrations. Philadelphia and London, W. B. Saunders Company, 1911. Cloth, $5.50 net.

The recent development of Obstetric Surgery has reached a point where it would seem to any one that a concise statement of methods of operating might be of service to the profession.

The author of this work has stated his subject most concisely, with great caution, and is worthy of careful hearing. The subject is fascinating, reads like a poem and cannot fail to be of interest to the reader.

Minor and Emergency Surgery. By Walter T. Dannreuther, M. D., Surgeon to St. Elizabeth's Hospital and to St. Bartholomew's Clinic, New York City. 12mo volume of 226 pages, illustrated. Philadelphia and London, W. B. Saunders Company, 1911. Cloth, $1.25 net.

This book is adapted exclusively to the needs of the hospital interne, and the text has been prepared for this purpose exclusively. It is an excellent book for its purpose.

A Text-Book of Materia Medica for Nurses. Including Therapeutics and Toxicology. By George P. Paul, M. D., formerly Assistant Visiting Physician and Adjunct Radiographer to the Samaritan Hospital, Troy, N. Y. Second edition, 12mo of 282 pages. Philadelphia and London, W. B. Saunders Company, 1911. Cloth, $1.50 net.

The author has made his additions principally in the sections on Practical Therapeutics, and he confidently trusts that this will meet the approbation of his readers, as it undoubtedly will. The book will still remain standard.

Life, Death and Immortality. By William Hanna Thomson, M. D., LL. D. 12mo, cloth. $1.00, net; by mail, $1.10. Funk & Wagnalls Company, Publishers, New York.

The author approaches his subjects from a scientific basis, and much attention will be attracted to the fact that his conclusions point distinctly to immortality.

Recent Studies of Cardio-Vascular Diseases. Medical Symposium Series No. 2. A reprint of articles published in the Interstate Medical Journal. Paper, 216 pp. St. Louis, Interstate Medical Journal Company. Price, $1.00.

The reader may obtain from this collection a good idea of the general tendencies of modern work along this line.

A Hand Book of Medical Diagnosis in four parts. I, Medical diagnosis in general; II, the methods and their immediate results; III, symptoms and signs; IV, the clinical applications for the use of practitioners and students. By J. C. Wilson, A. M., M. D., Professor of the Practice of Medicine and Clinical Medicine in the Jefferson Medical College and Physician to its Hospital, etc.; 418 text illustration and 14 full page plates. Third edition, thoroughly revised. "The whole art of medicine is in observation." Pp. 1438. Price, $6. Philadelphia and London, J. B. Lippincott Company, 1911.

It is wonderful what changes will take place in a short fourteen months, and still it is only that time since the last edition of this work appeared, and there are many articles rewritten!

This is really a splendid handbook of medical diagnosis in every respect, and must have our unqualified approval! The handbook should be examined before deciding upon a work of this class.

Text-Book of Embryology. By Frederick Randolph Bailey, A. M., M. D., formerly Adjunct Professor of Histology and Embryology, College of Physicians and Surgeons, and Adam Marion Miller, A. M., Instructor in Anatomy, College of Physicians and Surgeons (Medical Department of Columbia University). Second edition, with 515 illustrations; pp. 672. Price, $4.50. New York, William Wood & Co., 1911.

The first edition of this work was well received and the demand for a second edition in two years is gratifying. It is intended of course for the student of medicine. In the present edition, errors have been corrected and paragraphs rewritten, in order to keep abreast the times. There has been no change in the general plan of the book. It is an excellent text-book.

Diseases of Infants and Children. By Henry Dwight Chapin, A. M., M. D., Professor of Diseases of Children, New York Post-Graduate Medical School and Hospital, etc., and Godfrey Roger Pisek, M. D., Professor of Diseases of Children, University of Vermont, etc. Second edition, revised, with 181 illustrations and eleven colored plates; pp. 636. Price, $4.50. New York, William Wood & Co., 1911.

In this edition the authors have incorporated all new matter that can be of service. The treatment of special diseases by vaccines has been exemplified as far as possible, and a table of dosage for the use of vaccines has been prepared. Syphilis in its relation to the Wassermann test and the arsenic therapy has been discussed. All the recent advances in pediatrics that do not readily come to the notice of the profession have been noted. The work has not been enlarged to any great degree.

It is a good working book for practical purposes.

A Text-Book of Pathology, with a final section on Post-Mortem Examinations and the methods of preserving and examining disease tissues. By Francis Delafield, M. D., LL. D., Emeritus Professor of the Practice of Medicine, College of Physicians and Surgeons, New York; and T. Mitchell Prudden, M. D., LL. D., Emeritus Professor of Pathology, College of Physicians and Surgeons, New York. Ninth edition, with thirteen full-page plates and 687 illustrations in the text in black and colors. Pp. 1114. Price, $5.50. New York, William Wood & Co., 1911.

As we have frequently pointed out, this is a work containing the knowledge necessary for the making of autopsies.

In this edition the section devoted to general pathology has been rewritten and expanded, and various phases of pathological physiology have received more attention than formerly.

The book has been largely revised and over forty new illustrations have been added. Many chapters have been revised, including the one on malaria by Prof. Francis Carter Wood, to whom the author acknowledges his indebtedness.

This book should receive our unqualified endorsement.

Orthopedic Surgery. By Edward H. Bradford, M. D., Professor of Orthopedic Surgery, Harvard Medical School, etc.; and Robert W. Lovett, M. D., Assistant Professor of Orthopedic Surgery, Harvard Medical School, etc. Pp. 410; $3.50. New York, William Wood & Co., 1911.

In the present excellent book emphasis is necessarily laid upon such measures of treatment as have been demonstrated to be of value in the clinical work at the Boston Children's Hospital in the past thirty years, in the interest of condensed statement, for the use of students and practitioners. The work is excellent.

Diseases of the Stomach. A text-book for practitioners and students. By Max Einhorn, M. D., Professor of Clinical Medicine at the New York Post-Graduate Medical School and Hospital; etc. Fifth edition, revised; pp. 531; $3.50. New York, William Wood & Co.. 1911.

This book has been thoroughly revised, and the field of diagnosis cleared largely by Radiography. The profession is taking increased interest in diseases of the digestive tracts, and that is a pleasure to all concerned. The author takes great satisfaction in the part he has contributed to that end. The profession has shown its appreciation by demanding a fifth edition.

An International System of Ophthalmic Practice. Edited by Walter L. Pyle, A. M., M. D., Philadelphia, member of the American Ophthalmological Society. Therapeutics by Dr. A. Darur, Paris. Translated by Sydney Stephenson, M. B., F. R. C. S., London, late Honorary Secretary of the Ophthalmological Society. Pathology and Bacteriologly by E. Treacher Collins, F. R. C. S., Surgeon to the Royal London Ophthalmic Hospital and Ophthalmic Surgeon to the Charing Cross Hospital, etc.; and M. Stephen Mayon, F. R. C. S., Surgeon and Pathologist to the Central London Ophthalmic Hospital, etc. With three colored plates and 237 figures in the text. Illustrated. Philadelphia, P. Blakiston's Son & Co., 1911. Pp. 588 and 444. Price, $4 each.

Dr. Pyle says that in pursuance with the announced purpose of this system to provide a compact and thoroughly modern digest of ophthalmic practice, Dr. Darier has endeavored to set forth concisely the established up-to-date methods of ophthalmic therapeutics and the results of the latest investigations in this connection. In the second volume Drs. Collins and Mayon are entirely responsible for the text, and they are fully competent to do so. These books are fully abreast the times and are worthy of a wide reading.

Electricity, Its Medical and Surgical Applications, including Radiotherapy and Phototherapy. By Charles S. Potts, M. D., Professor of Neurology in the Medico-Chirurgical College of Philadelphia, with a section on Electrophysics by H. C. Richards, Ph. D., and a section on X-rays by H. K. Pancoast, M. D., of the University of Pennsylvania. Octavo, 509 pages, with 356 illustrations and 6 plates. Cloth, $4.75 net. Lea & Febiger, publishers, Philadelphia and New York, 1911.

Professor Potts has adopted a new and very original method of handling his subject, and has accomplished this most thoroughly, yet plainly and concisely. To quote from the preface:

"The custom hitherto has been to consider the physiological action, therapeutic uses, and methods of application of each form of current separately. In this volume, on the contrary, these subjects have been discussed collectively, according to a medical rather than a physical subdivision. In other words, instead of devoting one section exclusively to the constant current, another to the static current, and so on, the author has grouped these modalities according to the effects produced. Thus, for instance, in discussing the action of the electric current on metabolism, the actions of all modalities on this process have been grouped. A similar plan has been followed in the description of therapeutic procedures, for instance, the methods of using and comparative values of all forms of current in stimulating motor nerves and muscles have been presented in one chapter. This plan offers distinct advantages, since the indications for treatment lead at once to the determination of the question whether electricity would be of benefit, and if so, the form of current which would secure the best results. Such an arrangement is scientific instead of empirical. It may be said to be the only plan which affords the highest practicality for the purposes of the physician and surgeon, as it presents the subject of electricity from the standpoint of its clinical uses, instead of following the arrangement customary in books on physics and bringing in the medical applications incidentally and disconnectedly."

Numerous cross-references enable the reader to pursue any line of knowledge given in this work, and in the section on therapeutics of individual diseases the references to the physiological action will be found convenient.

The book opens with a section on the physics of electricity, from the pen of Dr. Horace Clark Richards, Professor of Mathematical Physics in the University of Pennsylvania. Dr. Potts then follows with sections on electrophysiology, electrodiagnosis and prognosis, general electrotherapeutics, methods of obtaining general and local effects by indirect action of electricity, such as the Finsen light, and special electrotherapeutics. The volume closes with a section on the application of the X-rays, written by Dr. H. K. Pancoast, Professor of Roentgenology in the University of Pennsylvania, than whom no specialist on the subject stands higher. The text is elaborately illustrated. The work is moderate in size, clear in its presentations, comprehensive, modern, and suitable alike for the physician and surgeon, as well as for the student.

Case Histories in Neurology. A selection of histories setting forth the diagnosis, treatment and post-morten findings in nervous disease. By E. W. Taylor, A. M., M. D., Instructor in Neurology, Harvard Medical School, etc. Pp. 305. Boston, W. M. Leonard, 1911.

The object of this book, the third volume of the Case History series, is to set forth in practical form the fundamental facts regarding the symptomatology, diagnosis, treatment and pathological findings in the more frequent disorders of the nervous system.

The first section presents a general statement of diagnostic methods. Then follow the main divisions of the book: First, diseases involving peripheral nerves; second, diseases of the spinal cord; third, diseases of the brain; fourth, conditions of undetermined pathological basis; fifth, psychoneuroses.

The book is a broad and carefully prepared clinical course in neurology, dealing with actual cases and supplementing in a way that makes the text not only one of great value but also very interesting.

Recent Studies of Syphillis, with special reference to sero-diagnosis and treatment. Medical symposium series No. 1. Second edition (revised). A reprint of articles published in the Interstate Medical Journal. Paper, 212 pp. St. Louis, Interstate Medical Journal Company. Price, $1.00.

These studies bring the subject to date and will be found worthy of a wide reading.

The Practitioner's Visiting List for 1912. An invaluable pocket-sized book containing memoranda and data important for every physician, and ruled blanks for recording every detail of practice. The Weekly, Monthly and 30-Patient Perpetual contain 32 pages of data and 160 pages of classified blanks. The 60-Patient Perpetual consists of 256 pages of blanks alone. Each in one wallet-shaped book, bound in flexible leather, with flap and pocket, pencil with rubber, and calendar for two years. Price by mail, postpaid, to any address, $1.25. Thumb-letter index, 25 cents extra. Descriptive circular showing the several styles sent on request. Lea & Febiger, Philadelphia and New York.

The text portion has been thoroughly revised and brought up to date. It contains, among other valuable information, a scheme of dentition; tables of weights and measures and comparative scales; instructions for examining the urine; diagnostic table of eruptive fevers; incompatibles, poisons and antidotes; directions for effecting artificial respiration; extensive table of doses; an alphabetical table of diseases and their remedies, and directions for ligation of arteries. The record portion contains ruled blanks of various kinds, adapted for noting all details of practice and professional business.

The Healer.—By Robert Herrick. Author of "Together." Pp. 455. Price, $1.35. New York, The MacMillan Company, 1911.

This book will interest the members of our profession as it relates to doings which are familiar to at least some of them.

It will be found attractive and interesting.

The Medical Record Visiting List, or Physicians' Diary for 1912. New revised edition. New York, William Wood & Company, 1912.

This is one of the best of its class and is arranged for sixty patients per week. There is none better.

Currents of High Potential of High and Other Frequencies.—Second edition. By William Benham Snow, M. D., author of "A Manual of Electro-Static Modes of Application, Therapeutics, Radiography and Radiotherapy," etc. Scientific Authors' Publishing Co., 349 West 57th St., New York. Price, $3 net. 1911.

This work has been entirely revised, rewritten and enlarged. Forty cuts have been added, and the chapters on High Frequency Currents and Therapeutics have been revised and entirely rewritten. The work contains the results of the author's personal researches and investigations, and includes most that is valuable on the subject of High Potential Currents. The developments in the subject of Hypertension and its treatment by the d'Arsonval current, as well as the employment of direct d'Arsonvalization in the treatment of infection, have been thoroughly considered in this edition.

The Treatment of Fractures by Mobilization and Massage.—By James B. Mennell, M.D., B.C., Cantab, etc.; late Resident Medical Officer of St. Thomas' Home, etc. With an introduction by Dr. J. Lucas-Championnière, Chirurgien Honoraire De L'Hotel, etc. Octavo, pp. 458; $4. Macmillan & Co., Limited, 66 Fifth avenue, New York.

This is the history of the treatment of fractures by mobilization and massage, and deals essentially with this subject. Attention has been given to practical results rather than to pathology The most auspicious feature of this method of treatment is its simplicity, and its success what might be expected. We commend the work as something new, important and worthy of consideration.

RETROSPECTIVE

Hammer-Toe.—B. J. O'Neill, San Diego, Cal. (Journal A. M. A., Oct. 7), reports a case of hammer-toe in a young woman of 22 which had been present since childhood, causing great pain. Amputation was advised but was refused. He therefore excised the distal end of the first and proximal end of the second phalanx for a distance of about one-fourth inch. He then dissected loose a thin layer of subcutaneous tissue at the outer side and cut it loose at its distal end so as to make a flap with the pedicle at the proximal end, passed this across between the two bones and sutured it by one stitch to the inner side below and above. The wound was then closed with subcuticular silk-worm gut and fastened, foot and toe, by adhesive strips to a specially prepared splint in such a way as to hold the toe perfectly straight. The result was good. At the present time, six months after the operation, the toe is only slightly thickened at this joint, is straighter than any other toe on the foot and gives no pain or discomfort. There seems to be a new joint formed, fully as mobile as the others.

Control of Plague.—The report of a Committee on Methods for the Control of Plague to the Section on Preventive Medicine of the American Medical Association at Los Angeles, by Drs. Rupert Blue, E. E. Heg and W. F. Snow, is published in the *Journal A. M. A.*, Oct. 14. They find that, while the disease has been pretty well controlled in San Francisco, large sections of the central and coast counties of California are still infected in their rodents and several human cases have occurred directly traceable to these animals. The methods for the control of the present situation should, they think, include the following measures: "The prevention of spread, from rural to urban rodents by limiting the chances of contact and interchange of ectoparasites between the two. This suggests (a) the maintenance of squirrel-free zones around the centers of population; (b) prohibiting the marketing or traffic in rodents; (c) general rat destruction in the cities. 3. The prevention of a wider spread among rural rodents and the ultimate invasion of the eastern states by such means as the following: (a) destruction of known enzootic foci in the various counties; (b) general rodent extermination throughout California and the nearby states." They think the work should be inaugurated in other parts of

the United States. A more extended argument is made by Dr. Rupert Blue of San Francisco, chairman of the committee. He shows how, with proper organization, it is possible to rid a city of plague infection by systematic destruction of rats, and rat-proofing in building is the most important single measure for the control of plague. How to prevent the spread from the country to the city after the rural districts have become infected, as is the case in California, is a serious problem, which has been taken up by the California State Board of Health. Blue recommends that a general extermination of rodents of the families *Sciuridae* and *Muridae* should be systematically carried out in all Pacific and Mississippi Valley states, and he also suggests thorough supervision of foreign commerce to prevent the introduction of plague from without.

Tubal Rupture in Extra-Uterine Pregnancy.—C. W. Barret (The Leucocyte, July 15, 1911), states that pregnancy, which is considered to be always extra-uterine in the beginning, assumes pathologic significance when it undergoes ectopic attachment. The ovum attached to the tube has a parasitic action, having a malignant tendency in that it destroys maternal tissues, imbeds itself in the tube walls and tends toward death of the mother, but in "making its bed digs it own grave." The growth of the ovum, or the enlargement of the dead ovum mass, together with the destruction and thinning of the tube wall, leads to almost certain rupture of the tube. The primary rupture may be partial and even slight; or it may be complete and even fatal. If incomplete a subsequent rupture or ruptures are the rule. With rupture free hemorrhage more or less severe occurs, which is never to be looked upon lightly and which may prove fatal. The loss of blood may be through one rapid fatal hemorrhage, or there may be a series of lesser hemorrhages. If the patient does not succumb to loss of blood, the presence of blood and of the ovum in the abdominal cavity act as irritating foreign substances leading to loss of function and pathological changes in the viscera, and perhaps to local or general infection, thrombosis, embolism and the like. The dead ovum is only slightly less harmful from the standpoint of rupture than the live one, and may be even more harmful from the standpoint of infection. A study of the pathology makes all the treatment looking toward cutting the ovum appear irrational. Patients in good condition with or without ruptures are almost certain to have future trouble, and should have an operation as soon as is consistent with good work. Patients in bad condition, with concealed hemorrhage from the cause in question, have collapse in proportion to the amount of blood lost; and rational treatment must look with certainty toward the stopping of future hemorrhage. An opening of the abdomen with clamping or ligaturing of the vessels is the only reliable means of controlling internal hemorrhage; and if done rapidly and with care, taxes the patient little. The clinical experience of the world, and a study of the pathology of this condition, point to the danger of delay. The more desperate the case while the patient yet lives, the greater the call for immediate action.

Residual Function.—As the body evolves, the several new functions are derived from the primitive tissues. It is probable that all functions and the source of all new functions is related to the connective tissue, and, through it, to the somatic sexual tissue. In this way alone can the problem of heredity be understood, and the manner of transmission of natal individualities. By the subsequent production of mental and other distributed faculties, the germ-plasm surrenders a portion of its inheritance. Thus we can account for the relative infertility of genius. We can see, conversely, that variations in type are essential to the production of particularly specialized elements, personal and corporeal.

Can it be that ants and bees understand the bearing of this sexual subtraction or substitution, and thereby are able to create types at will? As the queen type, the drone, and the worker, for example.

It becomes a matter of interest to us, in the fact that at this moment we are unable to foretell of a child to what point his talents may turn. A musician, a writer, a scientist, is born, not made, we assert. But this coincidence is little credit to the power of selection which our studies ought to form.

May not the relative infertility of genius point to its substitution or diversion of sexual intent?—to some internal power to divert that reservoir of potential?

Psychology and Refraction.—S. L. Ledbetter, Birmingham, Ala. (Journal A. M. A., Oct. 14), discusses the psychologic aspects of refraction. If all persons were just alike in their brain quality and habits of thought refraction would be reduced, in a measure, to a simple question of accurate observation and correct measurements. Such, however, is not the case. The individual has to be considered with all his eccentricities and idiosyncrasies. The fitting of glasses to presbyopes in the large proportion of cases calls for no great skill, but does require a reasonable amount of common sense and knowledge of human nature. Most people of this class are not hard to please and will get along with very inferior fitting, and thus fall readily into the hands of unscrupulous spectacle venders. There are some, however, who are skeptical and fault finding, and hard to suit, and the patient of this class is apt to give the physician more or less trouble. With patients of this class there is a fertile field for the judicious use of psychologic influence. There are some specially troublesome individuals who imagine glasses would be an advantage to them, even if they do not really need them, and these may diagnose their own cases and deceive the examiner, sometimes unintentionally. While Ledbetter does not approve of suggestive therapeutics or hypnotism as practiced by the ill-advised or the charlatan, he believes that much can be done with persons of this type by mental suggestion. They readily fall into the hands of the unscrupulous, and the skilled refractionist who is lacking in the power to inspire confidence will have difficulty in leading the patient along lines of least resistance to correct conclusions. Sometimes it is even advisable to give these patients glasses when they do not need them, and even an honorable practitioner may do good in this way if the interest of his patient is subserved. An unscrupulous individual, however, can do a great deal for his own profit and the loss of the patient, and this is the secret of much of the success of the traveling optometrist's quackery, of which Ledbetter narrates some examples. Of course, the public finds itself imposed on in the end, but in the meantime it suffers, and the condition seems to be almost irremediable, as any effort to protect the people by legislation or instruction is looked on as inspired by jealousy.

In Acute Pelvic Inflammation Goth (Progressive Medicine) enjoins rest, uses the abdominal ice-bag and also cool vaginal douches (20 litres of water at about 10° C twice daily) especially when the abdominal wall is fat and when exudate can be felt near the vaginal vault. When pain and tenderness have disappeared and the temperature is normal, in order to aid absorption, Goth changes to hot applications, douches and tampons saturated with 10 per cent. icthyol-glycerin or 20 per cent. protargol-glycerin. Cold vaginal irrigation for one-half hour (gradually reducing from 25° to 10° C) is appropriate in some cases of uterine atony or atony of the uterine ligaments (to produce contraction of the pelvic structures), of subinvolution, and to control cases of menorrhagia.

Not To Be Read Before Going Out to Lunch.—The Monthly Bulletin, Indiana State Board of Health (Aug., 1911), details what the sanitary crank has seen in cafes: a waiter wiping his sweaty forehead with the towel he carried on his arm for wiping dishes, knives, forks and spoons, which had been used a short time before, simply wiped on a not too clean tea-towel without even dipping them into water; tumblers, after having been used at table, simply wiped with a not too clean tea-towel without even dipping them in water; knives, forks and spoons and tumblers after use at table rinsed in greasy yellowish dish water, and then wiped with a tea-towel which was an approach to rubber roofing in color; restaurant kitchen help pass hands through their hair and then handle sliced bread; two mice jump out of a bread box and the sliced bread therein sent to the table as if nothing had happened to it; a waiter picks two flies out of a glass of milk with his fingers, and then places it on a table to be drunk by a child; a cook at a nickel-bound grill in white cap and coat, insert his finger in his mouth to scratch the interior surface and upon removal immediately pick up a nice porterhouse steak and place it upon the broiler; flies proceed direct from a spittoon to a bowl of berries on the counter, which were waiting there to be served when called for; a cook change his shoes and socks in the kitchen and then, without washing his hands, proceed with the handling of food; a bowl of sugar spilt upon the floor, then picked up with the hands and carried directly to the table; a basket of lettuce on the floor in a restaurant kitchen and a dog belonging to the cook—*Quantum sufficiat!*

Every imbecile, declared Fernald, especially of a high grade, is a potential criminal, needing the proper environment and opportunities for the development and expression of his criminal tendencies. The life history of the imbecile put under permanent protection and training at an early age, is very different from that of the feeble-minded who grow up at large in a modern urban community. Nearly all the imbeciles trained from childhood or youth may be taught habits of industry and comparatively good behavior; and a large proportion of them settle down to a condition of inhibition of the antisocial traits, and indeed to a condition of ostentatious pride in the virtues which they unwillingly practice.

Enlarged Mediastinal Glands, observes J. A. Honey (J. A. M. A., Sept. 16, 1911) occur more frequently on the right side than on the left. They may cause the signs which are often considered as those of early apical tuberculosis. They occur in both tuberculous and non-tuberculous patients, and probably occur as frequently in adults as in children. Positive tuberculin reactions may, therefore, in negative tuberculous cases, be due to enlarged glands in the mediastinum when apical signs are not present. There is a common failure to diagnose the presence of mediastinal or bronchial glands; it is most important, in the light of such researches as these, to emphasize the more careful examination of so-called early tuberculosis cases.

Sleep for Children.—The Western Medical Review (May, 1911) finds that writers on this subject, while agreeing in the main as to the efficacy of sleep as "nature's sweet restorer," still believe that two much sleep is harmful, and that most people sleep too much for their health. The views of these writers, especially with regard to young children are that even infants at the breast are allowed too much sleep; that they need not only time to sleep, but time to wake if their intellect is to be awakened. The tendency to sleep shown by children and the uneducated is explained on the ground that their psychic world is so poor that it is almost impossible for them to take any interest in their own thoughts and ideas. It is considered that even during the first four or six weeks of life there ought to be two waking hours during the day, the waking time to be increased as the baby grows. All methods of putting children to sleep artificially by means of monotonous sensations are strongly censured, including the crowing of lullabies and the rocking of babies in cradles or simply in the arms. The latter procedure is said to produce sleep partly because consciousness is fatigued by a series of monotonous sensations and partly because at the same time artificial anemia of the brain is induced. The approximate period of sleep necessary for children at different ages is given: between one and two years from 6 to 8 waking hours; two and three years, 7 to 9 waking hours; three and four years, 8 to 10 waking hours; four and six years, 12 to 14 waking hours; nine and thirteen years, 14 to 16 waking hours.

Intraperitoneal Cystotomy.—W. H. Dukeman, Los Angeles, Cal. (Journal A. M. A., Oct. 14), says that it is eighteen years since F. B. Harrington of Boston first performed the operation of intraperitoneal cystotomy for the removal of tumors, yet only a very few surgeons have recognized its safety and ease of performance. In view of this fact he thinks it worth while to add a case resulting in a most satisfactory and steady recovery to the others already reported. The case was one of epithelioma, evidently of low-grade malignancy. It was successfully removed and the patient left the hospital on the seventeenth day. The mortality from this operation in the cases so far reported has been less than 10 per cent. as against 28 to 47 per cent. by the suprapubic and perineal methods. In the hands of a careful operator, the danger of soiling and injuring the peritoneum is practically nothing. There were no postoperative annoyances to his patient. Dukeman suggests that the enlarged prostate gland can be easily and safely removed by this method and all hemorrhage controlled by closure of the capsule by suture.

Iodine as a disinfectant is not sufficiently appreciated, states C. F. Nieder (New York State Journal Medicine), who has used with satisfaction the tincture in the disinfection of minor wounds. He has

used it to prevent infection of slight abrasions of his own hands and found that these healed quickly; the inflammatory reaction is by this means almost invariably prevented. Cases: A boy stepped on a rusty nail, which punctured the ball of the foot through to the dorsum. He was seen two days later with the wound infected and the foot badly swollen and very painful. A small incision was made on the dorsum and a fine ear curette was passed through the wound, cleaning out particles of dirt. A very narrow strip of gauze was twisted, dipped into the tincture of iodine and passed through the wound. On the following day the pain and swelling had disappeared. The gauze was left in for another day and then removed. Recovery was rapid. Again: A boy had his palm badly lacerated by a bursting cartridge. The wound was cleansed, particles of wadding being removed from between and even from behind the metacarpal bones. The wound was swabbed out with tincture of iodine and rapid recovery ensued. Again: A man was shot through the thickest part of the hand whilst cleaning a revolver. Particles of skin were removed from the wound at the point of entrance. Then a narrow strip of gauze saturated with tincture of iodine was passed through from the point of exit, between the metacarpal bones, and allowed to remain in for two days. It was then partly withdrawn, allowing the wound of exit to close, and on the following day was removed entirely. The patient returned to work five days after the accident.

The American Association for the Conservation of Vision is inaugurating a widespread campaign of public education to call the attention of people to the care and preservation of their eyesight. The Association has recently moved to new offices at 105 East 22d Street, New York City. A recent election of officers leaves the personnel as follows: President, Dr. F. Park Lewis; Vice-President, E. L. Elliott; Acting Secretary, Douglas C. McMurtrie; Acting Treasurer, T. Commerford Martin. Dr. Hiram Woods, of Baltimore, is on the board of managers, and Dr. G. E. de Schweinitz, of Philadelphia, Director of the Department of Diseases and Defects of the Eye.

The mortality during the past week was 13.36 per one thousand of the population, a decrease of 1.13 of a point which means, taking into consideration the increase in the population, a decrease of 108 deaths compared with the corresponding week of November, 1910. The month of October is the one that holds the lowest mortality throughout the year, but November bids fair to equal it. All the communicable and infectious diseases show a decrease compared with the figures of the corresponding week of November, 1910. The mortality from diphtheria and croup for the past week was lower than any other week in the month of November in the history of the city, there being only 12 deaths reported, as against 30 for the corresponding week of last year. Continuing a comparison with the figures of last year, the mortality from typhoid fever was 50 per cent. lower, the diarrhoeal diseases showed a decrease of about 33 per cent., the mortality from pneumonia was 12 per cent. lower and that of tuberculosis 15 per cent. lower. Only two groups of diseases showed an increase and those were the circulatory and the digestive, these two groups being typified by the heart and liver diseases.

Psychological Tests.—Prof. Hugo Munsterberg has observed that when a woman tells a lie she turns her toes inward and that when a man is perjuring himself his toes turn instinctively in the opposite direction. "The average man and woman cannot tell the truth before a court. First, because he or she is usually mistaken as to facts. Second, because neither he nor she has the fluent language at command with which to clothe the truth, and third, because mankind is more prone to tell what he wishes were true than what really is true. Man does not want to tell the truth. The beauties of music, of poetry and of painting have lifted his soul above earth, and he has no desire to drop back to the sordid realities of cold fact."

Gas Bacillus Infection.—In a case studied by P. W. Bill (Yale Med. Jour. May, 1911) it was found that the original wound was a sharp cut, punctured, non-pulpifying one. The time elapsing from the moment of injury to the appearance of symptoms was eight days, whereas it averaged four days in the cases previously reported. The eight-day incubation is accounted for by reason that the infection was due to the development of spores that were not removed at the original operation. It is presumed the patient was infected at the second operation, which was done immediately following the amputation of a leg crushed by a railway train; the objection here is that the gas bacillus patient had the chill, rise of temperature and other signs of infection twelve hours before the second man was injured. The latter also left a perfectly clean wound. In Bill's case the thigh at no time showed distention or emphysema, while the leg below the knee was markedly distended and emphysematous. Bill does not account for this phenomenon. The patient recovered despite that the B. aerogenes capsulatus developed in the stump after amputation. In all wounds into which soil has been carried we open widely, irrigate very thoroughly and drain.

Air Sickness in Aviation is described by Dr. R. Cruchet as analogous to mountain sickness, and as due to sudden changes in the atmospheric pressure. Aviators are said to be often affected, at altitudes above three thousand feet, with quickened respiration and heart beat, headache and nausea. In the descent, after partial and temporary adaptation to a more rarified atmosphere, the conditions are reversed and the rapid increase of pressure leads to palpitation, suffocation, tinnitus, vertigo and somnolence. Cruchet believes that some of the fatal accidents have been due to the aviators becoming momentarily unconscious from these physiological phenomena and thereby losing control of the machine.

Explosives in Coal Mining.—T. Oliver (Lancet, June 10, 1911) is convinced that carbon monoxide is the poisonous agent in explosions; and he would bring the affected miner as quickly as possible into the open air. If this cannot be done he should be taken into one of the main ways where there is a strong current of ingoing air; if life is threatened and the atmosphere is not dusty artificial respiration may be resorted to. Once in the open air the symptoms

usually gradually subside. Care should be taken to wrap the body in thick blankets and to apply warmth to the extremities. Frequently there is vomiting, which brings relief. When the miner is pale, appears to be seriously ill, and the breathing is suspended, artificial respiration or oxygen inhalations are called for. Bleeding followed by transfusion might be necessary; also stimulants, with or without strychnine, if the pulse beats are feeble and intermittent. On the theory that a nitrite is present in the blood (from nitrogen decomposition) ammonia inhalations are given as also ammonium carbonate internally. Miners should carry about with them small vials of sal volatile for immediate use in cases of necessity. When there is flushing of the face and severe headache cold applications may be made to the head with atropine or ergot, by hypodermic. Antefebrin for the headache in the milder forms of taxemia.

Humanitarian Furs.—Vegetarians who, not content with denying themselves flesh foods, decline also to wear any article of clothing for the manufacture of which the body of an animal has been sacrificed, have oftentimes found it difficult to be consistent. Even a leather bootlace would be barred. However, the footwear problem has been solved; the out and out vegetarian may now obtain boots made of a substance which is certainly not like leather. Still, the equivalent of furs has remained to be sought; for strictly vegetarian ladies would scruple to carry a sealskin muff. But this difficulty has also been overcome. "Smart-looking" wrappings have been devised which have the appearance of moleskin without the reality; their composition is a trade secret, but they are labelled "humanitarian furs," and have already secured a position in fashion. Furs are not always what they seem to be or are labelled; but furs innocent of any association with the animal world are indeed the last word in imitation.

Mercenary Doctors.—Dr. Henri de Rothschild is a kinsman of the bankers of that name; he is a famous playwright and also a physician. In a lecture in Paris on "Doctors in Modern Society" he adverted to the modern discoveries in antiseptics, radiography and bacteriology; and considered that modern physicians must specialize. He condemned the mercenary doctor, who is always sure of his fees before he treats a patient; but with equal zest he also condemned those patients who put the doctors' bill the last on their list. Medicine has now become so wide a study that no man can be expected to know all the branches; each one must specialize. There are in medicine moral obligations which are found in no other profession. As to professional honor Dr. de Rothschild advocated the creation of regular tribunals, of which doctors alone should be members. Physicians should be judged by physicians, just as lawyers should be judged by judges, artists by artists, and magistrates by fellow-magistrates. The lecturer related an incident, not to the credit of some bonifaces: A well-known physician was sent for by an American residing at a hotel; several times he called, but was told as frequently that the gentleman was out. Finally he called again, sending up a card with some other name, representing a business enterprise. He was shown to the room at once and saw his patient; the reason why he had not before been able to see his patient appears to have been that the hotel had an arrangement with another physician to visit their sick guests, without regard to the latter's personal preferences.

Fat is often unappreciated or misunderstood, observes the *Medical Record,* and is unduly blamed for sins of delinquencies of other body food. From 15 to 20 per cent. of every healthy body is composed of fat; and its chief sources are the starches and sugars, though certain facts are directly utilized. It is very probable that fats are completely decomposed in the intestine, and that the fatty acids formed are absorbed, either as soaps or in a solution brought about by this bile. As a source of energy for the development of heat, fat may be described as quickly available, but not so lasting as some other substances. By its concentrated fuel power it saves other tissues, especially the albuminous ones, from over-oxidation, and is valuable as a reserve force. By its presence the protein is better enabled to do its work in tissue building; and as a storage of energy for emergencies it is of great importance. The last material use of fat is to serve as a protection of the body from injury and cold. It forms an outer cushion for the frame. From an esthetic viewpoint the physiological and orderly distribution of fat in the connective tissue makes all the difference between beauty and ugliness. We should consider here its reserve function in relation to active vital processes. A liberal deposit of fat is one of nature's wise precautions to make it possible to endure some of the trials of existence. It has even been known that fat people are more contented and optimistic than lean ones; and the supply of fat may be compared to the ample bank account of a busy and provident man. A physiological fat reserve by its very presence exerts a quieting and reassuring influence on the vital forces most concerned in constructive metabolism; whilst its lack leads to a physical discontent and unrest, which sooner or later reacts on the disposition, developing into that pessimism and temperamental discontent so often seen in lean people.

Arteriosclerosis begins as a localized or diffuse thickening of the intima; then the middle and outer coats of the arteries become involved. It probably starts as a compensatory hyperplasia of the intima, to restore to the normal lumen of a vessel dilated through weakening of its walls by a degenerative process, or to resist the strain accompanying high tension. The tendency to arteriosclerosis may be inherited; or there may be an individual predisposition. The affection is probably usual after forty years of age. Muscular overexertion, worry, mental overwork, habitual overeating, chronic intoxications (such as alcohol, lead, gout and syphilis) and chronic interstitial nephritis are the chief causes.

The pathological process may be confined chiefly to the aorta, single vessels, cerebral or other groups, or be general. The veins may be similarly involved. There are three main forms. (1) The nodular or the circumscribed, found on autopsy chiefly in the aorta and larger branches as yellowish areas, usually hemispherical, flat and projecting slightly from the intima. After atheromatous degeneration occurs these may be replaced by ulcerated patches, on which

thrombi may form and which may be the starting point of aneurism. Microscopically the adventitia and media show infiltration and degeneration, then compensatory proliferation of fibrous and elastic tissue in the intima, sometimes of its endothelium. Fatty degeneration of this new tissue is common, and necrosis of the thickened area leads to atheromatous cysts, which may extend through the intima, forming ulcers. Calcification may occur in the new tissues of the intima and in the necrotic foci. (2) There is senile arteriosclerosis, in which the larger arteries are tortuous, dilated, with stiff, thin, often calcified walls. Atheromatous cysts and ulcers are present. All coats, especially the media, show degeneration. The intima often contains calcareous plates and has thrombi on its surface. Other viscera show senile atrophy. The heart may show brown atrophy or hypertrophy. (3) Diffuse arteriosclerosis involves the aorta and its branches, even the small vessels. They are dilated and their walls are thickened, the intima may be smooth or show slightly elevated white areas, some yellowish from atheroma. The media is degenerated and necrotic, sometimes calcified. The subendothelial connective tissue is greatly proliferated, especially when the adjoining media is weakened; and the endothelium itself may proliferate. The degeneration of the media, with thickening of the intima, is most marked in small arteries. The left ventricle is hypertrophied. There are often interstitial myocarditis, chronic interstitial nephritis and other sclerotic visceral changes.

As to symptoms and physical signs. If the lesion is extensive and advanced, enlarged, tortuous superficial vessels may be seen and felt as thicker and harder than normal. The pulse is of increased tension, though this is often obscured by the rigidity or bending of the walls. Calcification may be detected by means of the X-rays. The physical signs of hypertrophy of the left ventricle, with accentuated aortic second sound, are present. There may be no other symptom than increased quantity of urine. Symptoms depending upon the vessels involved and the severity of the lesion, are: Renal, those of chronic interstitial nephritis. Cardiac, due to involvement of the coronary arteries—thrombosis with sudden death, angina pectoris, chronic myocarditis, aneurism or rupture of the heart. Cerebrospinal, such as headache, dizziness, insomnia, psychic disorders, aphasia, and symptoms of hemiplegia, monoplegia, cerebral hemorrhage, myelitis, locomotor ataxia and of various sclerotic cord lesions. In the extremities we may find numbness, coldness, tingling, pain, paraplegia or intermittent claudication or thrombosis or gangrene. We must fear aneurism. We make the diagnosis by the palpable thickening of the arteries (temporal radial) increased tension, hypertrophy of left ventricle, and accentuation of second aortic sound.

Treatment: The mode of life is regulated; quiet living is enjoined; alcohol is as much as possible avoided, as also excesses in eating, drinking or exertion, excitement and worry. The food should be plain and wholesome. Care is taken to maintain the regular action of the bowels and the kidneys. Normal diaphoresis should be maintained by daily baths. Syphilitic cases require potassium iodide. High tension requires nitroglycerin. For very high tension or in cases with dyspnoea and other signs of cardiac insufficiency we venesect. In the later stages of arteriosclerosis we treat the visceral conditions as they arise. The whole situation should be explained to the patient so that his co-operation will be secured. As arteriosclerosis is an affection of middle and advanced life, it will be difficult to get set habits changed. Those who can afford it should spend part of the year at a mineral spring.

Tufts and the Carnegie Fund Rules.—The application of the Carnegie Foundation's recommendations on medical education in the last year at the Tuft Medical School has resulted in "a marked decrease in numbers without any perceptible improvement in the quality of the men admitted," states President W. Hamilton, who declares further that "the schools which have prospered since the publication of the Carnegie Foundation report on medical education are the poorest and least scrupulous." Tufts adopted the Carnegie Foundation suggestions restricting applicants for admission; but President Hamilton finds that the suggestions when practically worked out, do not secure better men or a higher standard of scholarship. "No set of purely mechanical tests can ever determine the student's ability to do college work. Our colleges are in some danger of yielding too far to the standardizing pressure and forbidding entrance to or actually casting out, some of the really best and most promising youth of our country. In every doubtful instance the real test of a man's moral right to be in college is his ability to do the work, not his ability to satisfy entrance examinations.

Balneological Treatment of Disease.—W. R. Gore considers the spa treatment produces two definite effects upon the bacterial activity that is causative of most diseases: It prevents the development of many intestinal bacteria and it causes the elimination of those toxins already circulating in the blood. All the accessory modes of treatment—the various baths and forms of massage—are designed to the same end —they all help the circulation through the cell spaces and increase elimination through the various organs when applied generally. Local applications cause an increased flow of serum through the tissues concerned; here is again a factor in antibacterial treatment, though the increased resisting power given to the tissues by a flooding out of serum should also be considered.

The Individual Communion Cup.—A number of clergymen have expressed themselves as opposed to the individual communion cup; they have not seriously regarded the dangers of spreading disease by this means. The matter was brought up at the conference of the National Association for the Prevention of Consumption in England. The Rev. A. H. Stanton declared his belief that the suggestions put forward at this conference were without any practical foundation as regards the communion cup. "I have never heard of any English church clergymen who actually got consumption by partaking of the wine that remained in the chalice which had been handed round to communicants." We are inclined to agree with this clergyman; too much occasionless pathophobia has of recent years developed.

The Senile Heart.—In the treatment of a sufferer from extra systoles, states Hay (Liverpool Medico-Chirurgical Review, Jan'y, 1911), we must first assure him that this phenomenon is more distressing than dangerous. Then if, after inquiry, the more common causes, toxic and otherwise, can be excluded and if there are other indications of arteriosclerosis, general directions should be given, and a course of some preparation of iodine prescribed with benefit. When the extra systoles are frequent and distressing Hay has had good results from a mixture of acid hydrobrom. dil., liq. strychnin hydrochlor., with infusion gentian comp. Fresh air and exercise are very important, with diminution of the stress and strain of daily life. These patients must learn to "go easy."

"How far can the paroxysms of complete irregularity be influenced by treatment? If there is more than slight distress the patient should lie down, more especially for the first hour or two after the paroxysm, and it must be ascertained if the heart tends to dilate. If dilation is pronounced and persistent for a day or two after the cessation of the attack, then the patient had best make it a practice to remain recumbent while the irregularity is present. But if the distress is not great, and the dilation slight and transient, the patient may move above as he ordinarily does. In fact, moderate exercise sometimes diminishes the discomfort. At the beginning of the attack some patients are relieved by ʒi-ii of brandy, or a mixture of menthol, aromatic spirits of ammonia and spirits of chloroform. If the distress is very acute, morphine is undoubtedly the best drug and should be given without hesitation. A mustard plaster will ameliorate precordial pain. After the irregularity has become persistent many patients require no treatment directed specifically to the heart; but do well enough so long as they follow out the rules laid down for their guidance, and bear in mind that their range of permissible energy and endeavor is limited.

The digitalis group is given only for clearly defined conditions. Digitalis depresses the contractility of the heart muscles, and also the conductive power. But when the tonicity of the myocardium is impaired digitalis is markedly beneficial. Dilation is the clinical evidence of this failure of tonicity. However, we must not expect the same brilliant results in this type of dilated heart as is obtained in the heart failure associated with mitral disease. The dilation of the cardiosclerotic heart may be due to a simple stretching of the fibrofatty myocardium, rather than to an elongation of the muscular fibres, such as occurs in depressed tonicity; digitalis will not influence a dilation caused by such stretching.

Many symptoms of the senile heart are due to failure of the contractility; the dyspnoea, the precordial pain and distress point to depression of this function; and the alternating pulse is another indication of such failure. Digitalis aggravates this depression; and will thus emphasize the very symptoms it is intended to relieve. For example: A man suffering from arteriosclerosis was given digitalis in combination with squills and mercury. After a few doses there was much languor and depression, and an indescribable sense of impending disaster; the arms and legs felt heavy as lead, and there was a feeling of tightness across the upper part of the chest. The subjective symptoms were such that the patient declared he would rather die at once than endure them. The pill was stopped, and a preparation of digitalin substituted. After the second dose of the latter the patient experienced a repetition of his misery, and by the end of three days he flatly refused to take any more, preferring to die rather than do so. A tentative use of the digitalis group is, however, justifiable in cases with continuous irregularity and frequent action; when prescribed it should be combined with some vasodilator. The depressent action of digitalis on the conducting power of the bundle of His may prove helpful; this is most marked where there is any existing depression of conductivity. In failure of contractility there is no remedy equal to rest and sleep. Insomnia and restless nights must be ended. Quiet must be insured in the bedroom. Drugs must be given when other means fail. Chloral and the bromides are often sufficient; failing them the other hypnotics can be tried (veronal, sulfonal and the like)—these proving ineffective some form of opium must be resorted to.

When there is failure of myocardial contractility we prescribe the number of hours a patient shall lie abed. With high blood pressure and good cerebral circulation, many of these patients are active and restless; and they must have their activity curbed. Twelve hours in the twenty-four in bed, blue pill and saline on occasion, and ammonium bromide with arsenic daily, give good results. Anemic patients must have iodide of iron or some other iron preparation.

Pistol Shots in the Brain.—J. C. Da Costa (N. Y. Med. Jour.) states that practically every lodged bullet constitutes a fatal condition and it should be removed if possible, even if there are no symptoms. In most cases the harm done by retention is greater than the damage done by a skilled brain operator in accomplishing removal. This is even more the surgeon's duty when the bullet is near a vital center. When serious symptoms exist even the likelihood of grave operative risks do not forbid interference. In some cases, however, without symptoms, in which we are sure operation would be calamitous, we do not operate.

All chronic peptic ulcers that resist the efforts of the skilled internist (those that remain uncured after six or eight weeks' treatment) and seemingly cured cases that recur again and again should be referred to the surgeon for operation, states M. C. McGannon (Southern Practitioner).

Charges Dismissed.—Dr. Albert W. Ferris, president of the State Commission on Lunacy, was charged with receiving illegally a $200 fee for making, as an alienist, an examination of a former inmate of the Bloomingdale Hospital at White Plains. Governor Dix has dismissed these charges, it having been shown by Dr. Ferris that he received the fee for examining the patient and testifying regarding the patient's sanity before a sheriff's jury; and that the amount of his compensation was fixed by Justice Davis of the New York Supreme Court.

The Medicated Masses.—Our lay namesake observes that the "great unwashed" of the metropolis are also the "great medicated and drugged." Those whose task it is to enforce the regulation of the Board of Health forbidding the sale without prescription of patent medicines containing morphine, cocaine and combinations of these with other harmful substances know that hundreds of thousands of the ignorant classes use them regularly as alleviatives. The sale of these are a prime source of revenue to the cheap drug stores scattered over the city. The new law has the support of all doctors and of the enlightened public. There is a good chance of its successful enforcement, especially since the Health Department announces its intention also to wage a campaign of education. "The big druggists are already cooperating with the officials in this praiseworthy enterprise."

Bath Tubs for the children's ward of the Presbyterian Hospital in New York City have been abolished, states *American Journal of Nursing,* April 1911, as they have been concluded to be a great source of infection. Marble slabs sloping to a sink have been substituted, with sprays for cleansing the skin. When a baby is undressed it is laid on a clean bath towel covering the marble slab, and is sponged off with liquid castile soap on soft gauze and given a thorough spraying. It is then dried with a soft, warm towel and dressed in the usual way. Two low chairs, and a low table furnished with the necessary supplies, make it convenient for the nurse to give the eyes, ears and nose a proper cleaning; and the metallic cabinet blanket warmer keeps the clean clothing and diapers at a desirable degree of warmth in the cold season. The towels used during the morning bathing hour are immediately boiled in a small boiler placed at the side of the room and are dried in the drying room on the same floor. This is a saving to the laundry and prevents the mixing of towels. Soiled diapers are placed in large paper bags and are carried to the rinse house twice daily, where they soak twelve hours in a formaldehyde solution. Specimens for examination are collected during the night and are kept in a covered agate can. The addition of this dressing room has proved a great luxury for the baby and a time saver for the nurse.

Chronic Colitis.—D'Arcy Power (Brit. Med. Jour. Apl. 15, 1911) distinguishes a colitis due to simple imitation, one due to protozoal infection, another due to bacteria. The surgeon is, however, called on to treat but two classes: those in which a cause may be found; and those when the patient is suffering from a toxemia due to the absorption of toxic products from an ulcerating bowel, the cause of the ulceration being unknown. The colon may be imitated by the long continued presence of scybala. Imitation may be due to a polypus, an unsuspected cancer, more rarely to actinomycosis, glanders, tubercle, some strain of pneumococcus, gonorrhoea, syphilis or a pericolitis where an abscess has formed outside the bowel and burst into its lumen. When these causes have been eliminated there remains a large group of cases under the heading "ulcerative colitis." In these cases the bowel may be ulcerated locally, or the inflammation may extend through its entire extent. The lesion is chronic, destructive and generally extensive. The products of the ulceration are very abundant and their absorption is one of the most serious dangers of the disease. It is important to cleanse the bowel and keep it free of putrefying products. Drainage through the appendix enables this to be done satisfactorily. Appendicostomy will not cure the colitis, and the friends of the patient should clearly understand this. The object of the operation is to keep the bowel clean and to prevent absorption of toxic products. The ulcerative process continues until the patient becomes immune either by a natural or an artificial process.

Tuberculous Meningitis in Infants is not so rare in children under two years as has been generally supposed. M. Lafarcinade (Med. Press and Circ., Apl. 19, 1911) has collected 42 cases of this malady, among which twenty-two infants under two years suffered this disease. The hemiplegic or eclamptic form is found in infants at the breast, and gradually develops into a state of coma. The somnolent form, however, is characterized by these four symptoms: Progressive somnolence, ocular catalepsy, progressive emaciation, instability and irregularity of the pulse. The tendency to somnolence gradually becomes more marked, the child is nearly always asleep, and ultimately the sleepiness culminates in deep coma. Ocular catalepsy is due to the absence of palpebral winking, to amblyopia and to the disappearance of the conjunctival reflex. The affected child sleeps with his eyes wide open, but without seeing. Progressive emaciation dates from the prodromal period. The instability of the pulse consists in that if the pulse of a meningitic patient is examined several times a day considerable difference will be noted. In addition to the above four symptoms vomiting or diarrhoea is often present; and this symptom may lead the physician to diagnose gastroenteritis. When the disease is fully developed it proceeds invariably to coma and death. The treatment is symptomatic and necessarily ineffective.

Osteomyelitis of a rib complicating typhoid was cured by R. C. Rosenberger (N. Y. Med. Jour, May 13, 1911) by injections of an antagenous vaccine which he made from cultures of the typhoid bacillus found in pus discharging from the lesion.

Jewish prescriptions with regard to food had best be copied by the English people, especially in town —is the advice recently given by Dr. Allison, an English authority on food values. It is this race which is practically immune to tuberculosis; and Dr. Allison maintains that it has survived through many centuries of oppression because it was the best fed race on earth. Jewish mothers were greatly to be commended for bringing their children up on fatty foods. Another dietetic note is furnished by R. A. Sampson in the *Fortnightly Review,* to the effect that "perfect fruit alone can meet the demands of the human system, perfect fruit alone can stimulate the intellect, perfect fruit alone can control the feverish activity of the arterial pulsations, which otherwise, engendered by the consumption of inflammatory foods and drinks, wear out the human machine long before its natural time.

MISCELLANY

Scarlet-red.—What clinical reports upon the use of this remedy for skin repair are at hand?

Sprains may simulate fractures in many details, states W. S. Stern (Ohio State Medical Journal). There may be a spurious crepitus felt during the first hours, but after twenty-four hours this will have disappeared. The deep brawny swelling and the ecchymosis always present in fracture will usually be lacking in sprain, and the X-ray will show no bony changes. Sprains complicated with the tearing off of the outer bone lamella will give the same swelling and discoloration as an ordinary fracture.

Chronic Peptic Ulcers that remain uncured by the internist after eight or ten weeks, and seemingly cured cases that recur again and again, should have operation, in the opinion of M. C. McGannon (Southern Practitioner).

The albuminuria of the adolescent, in the opinion of J. F. Goodhart (Medical Record), has no sinister effect upon health or upon the duration of life, and with due circumspection such cases ought not to be excluded from the advantages of life insurance.

Baldness in convalescence.—Broig's formula is: ℞ alcohol ʒii.+ʒvi.; camphorated alcohol, rum, tincture of cantharides and glycerin, aa M. 75.

Anal Fissures.—S. G. Gant (Amer. Med., June, 1911), for recent fissures, secures semi-solid movements and cleanses and places in the rent a small gauze pledglet previously saturated in icthyol or in a silver nitrate solution. For old fissures he divides the sphincter at the site of the fissure, after anesthetizing the tissues posterior to the rent by injecting them with sterile water of a ⅛ of 1 per cent. eucaine solution until white.

The Indiscriminate Removal of Tonsils.—After the expression of much conflicting opinion on the advisability of removing tonsils, the American Laryngological Association, at its recent convention in Philadelphia, decided to submit the question to the council for an exhaustive report to be made a year hence. A discussion arose in which a member severely censured young surgeons for removing tonsils on the slightest pretext. It is somewhat difficult to understand why "young surgeons" only should have been selected for this criticism.

Cremation in Prussia.—It is probable this mode of disposing of the dead, which has previously been bitterly opposed by the Clerical party as being an un-Christian practice, will soon be legalized in Prussia, the Diet having recently passed the second reading of the government's bill in its behalf. This attitude of the government regarding cremation shows a complete change, the suggestion of it having heretofore been repeatedly opposed by those in power.

Burglars Who Use Chloroform. It is well observed in the city press that burglars who use choloroform as one of the tools of their trade quiet their victims by means almost as dangerous as by the use of knives, pistols and clubs, and they should be held to have aggravated the crime of burglary almost as much as the bolder who shoot and knife. It is a serious matter even for a physician expert in giving chloroform and who has taken all possible precautions not to carry his "subject" beyond the narrow margin of safety into eternity. To have this drug given by an ignorant and reckless criminal is so nearly sure to have disastrous consequences that "done in the commission of a felony it should be penalized as in the same circumstances assault with a deadly weapon." One such death has recently occurred.

The Status of the Midwife. T. Darlington (Am. Jour. Obst., May, 1911) believes that the midwife as she practices to-day is a menace to the lives and health of a large percentage of the mothers and infants in the city and state of New York—for the evil is widespread. The existing provisions for training and control are inadequate to meet the situation. Provisions for the thorough training as well as control of midwives is an urgent and imperative need. The law empowering the Department of Health to regulate the practice of midwifery is the logical beginning, but it will have to be strengthened by the establishment of schools for training. The medical profession should support and uphold the effort which is being made to better the practice of midwifery, which has been so degraded in the hands of women acknowledged to be for the most part dirty, ignorant and degraded.

Hospital Must Bar Alcohol.—The will of William T. Wardwell, once treasurer of the Standard Oil Company, and for many years head of the Prohibition party in New York, leaves $100,000 to the New York Red Cross Hospital at Central Park West and 100th Street, on condition that the hospital continues to refrain from the use of alcohol in treating patients. This sum is to go to the hospital upon the death of Mrs. Wardwell, the will stating that it is "on condition that the hospital be continuing substantially the methods of treatment now in practice in the said institution with respect to the non-use of alcohol as a medical agent, avoiding even tinctures where equally desirable action can be obtained from fluid extracts or alkaloids, and reducing to a minimum the use of other narcotics or potent drugs which might induce a habit or produce injurious after effects."

By the terms of the will the question whether the hospital has observed the terms of the bequest is to be submitted to three arbitrators, one chosen by the hospital, one by the executors, the third by the other two. If the hospital attempts to get the money by any other means the whole bequest is annulled. It is a pity that by any means whatever a hospital should forfeit the use of a remedy, such as alcohol, which when properly employed, is hardly replaceable by any other for its beneficent effects.

In tendon suture, warns F. L. Richardson (Bost. Med. and Surg. Jour., May 25, 1911), we must observe, in their order of importance: Asepsis; preservation of peritendineum; approximation of ends; restoration of tendon sheath; dryness of wound.

"Russo's Typhoid Fever Test," was found to react in almost every case studied by F. W. Ralph and W. H. Nelson in the Toronto General Hospital (Med. Rec., Aug. 19, 1911). A few positive tests were obtained in tuberculosis, but in no other cases that were not typhoid. Bile in the urine vitiates the test. The reaction is best obtained early in the disease.

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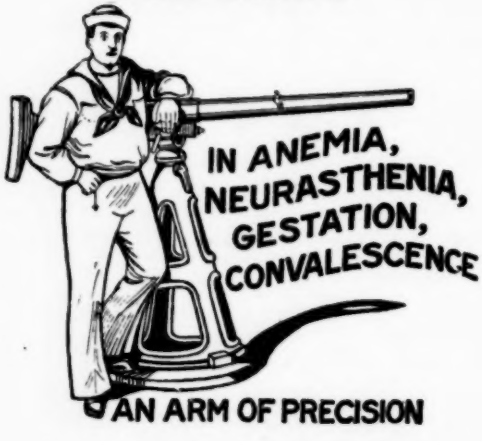

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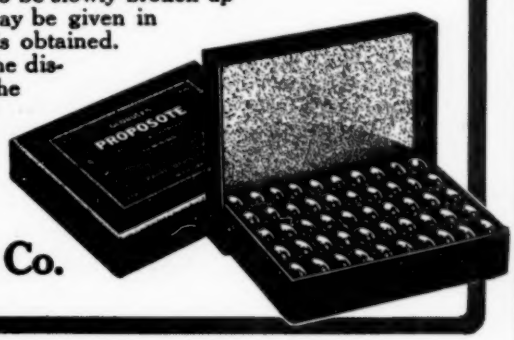

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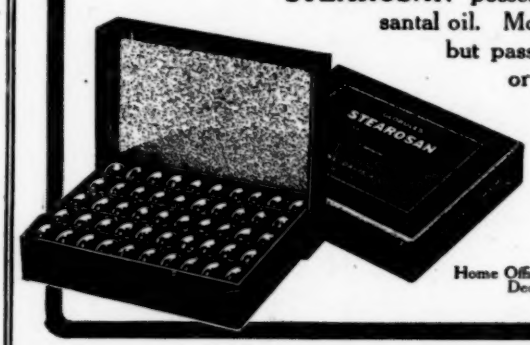

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Important New Preparations of Parke, Davis & Co. General practitioners will be interested in the announcement by Parke, Davis & Co. of two new products of their chemical laboratories. Proposote and Stearosan are the names chosen to designate the preparations in question.

Proposote is creosote in combination with phenylproprionic acid. It is a straw-colored, oily liquid, neutral in reaction, nearly odorless, and having a slightly bitter taste, suggestive of creosote. It is insoluble in water, but is slowly decomposed by alkaline liquids. The indications for it are the same as those for creosote. Tubercular cough following pneumonia, the cough of pulmonary tuberculosis, acute and chronic bronchitis, purulent bronchitis, abscess of the lung, asthma, and bronchitis complicated with Bright's disease are among the pathological conditions benefited by its administration. Being insoluble in acid media, it passes through the stomach unaltered by the gastric juice, to be slowly broken up by the alkaline fluids of the small intestine, hence may be given in gradually increasing doses until the desired effect is obtained. During prolonged administration, as is well known, creosote disturbs digestion, impairs the appetite, and often causes nausea and vomiting. Proposote is free from this objection.

Stearosan is santalol combined with stearic acid. It is an odorless, tasteless, light-yellow oily liquid that is insoluble in water and dilute acids, but is slowly broken up by alkaline fluids. The pathological conditions in which it may be employed with advantage are precisely those in which santal oil has long been used—chronic gonorrhea, cystitis, urethritis, vaginitis, pulmonary disorders such as chronic bronchitis, bronchorrhea, etc. It possesses therapeutic properties fully equal to those of santal oil, over which it has the important advantage of being practically without irritating effect upon the stomach. The explanation of the latter fact is that the preparation is not attacked by the acid gastric juice, but passes into the small intestine, where it is broken up or emulsified by the alkaline fluid and absorbed without difficulty. The distressing eructations and loss of appetite attendant upon the administration of santal oil do not occur when Stearosan is given.

Both Proposote and Stearosan were thoroughly tested clinically before being offered to the medical profession, and practitioners may be assured of their therapeutic efficacy in all cases in which they are indicated. They are supplied in 10-minim elastic gelatin globules, boxes of 25 and 100, and may be obtained through retail druggists generally.

Battle & Co., of St. Louis, have just issued No. 17 of their series of charts on dislocations. This series forms a most valuable and interesting addition to any physician's library. They will be sent you free of charge on application, and back numbers will also be supplied. If you have missed any of these numbers, better write Battle & Co. for them before the supply is exhausted.

The Century in 1912. Dr. (Sir William) Osler, now Regius Professor of Medicine at Oxford, has written for an early number of *The Century* of "The American Voice." This is a subject which Dr. Osler considers of much importance, and one on which he has made observations covering several years.

An enlargement of the thyroid (Am. Jour. of Surg.) beginning after middle life should arouse the suspicion of malignant neoplasm.—W.

O! Righteous Judge.—Judge Pugh's decision (Alienist and Neurologist) (District of Columbia) in restraint of automobile "horns of strange and ear-piercing quality" will be commended by all sanitarians and well wishers of humanity.

The rapid increase of the automobile and auto motor in popular demand has brought into public ken the speed cranks and noise paranoiacs. It is high time that the courts should take note of these disturbers of the people's peace and health and fine such as are sane enough to appreciate such lenient punishment, assigning the others for hospital detention and observation as to their sanity.

The auto craze brings lunatics to light, as wars, alarms or other public excitements bring other lunatics into view.

It certainly is not essential that our streets should be given over to unearthly shrieks that remind of women in the throes of travail or of children being crushed to death or the bellowings of bulls or the barkings and noise of disturbed wild animal menageries or the agonies of extreme fright or torture. One need not be awakened of nights dreaming of Gabriel's last resurrection blast simply because an insanoid speed-crazed chauffeur is passing. Let the courts and the police curb these incipient lunatics who are letting go of their brain inhibitions which keep them within that narrow boundary (conventionally and charitably to them) called the limit of sanity. The world has already enough ready to be made lunatics without its permitting the new automobile craze to make more and the courts are the right remedy and relief for the people who are yet sane and desirous of peace and sanity against these brain unstables and their soul-annoying ways.

Etiology and Constipation.—By Horace Heath, M. D., Denver, Colo. (American Proctological Society). Dr. Heath mentioned two groups—miscellaneous and mechanical. Under miscellaneous, the author regarded heredity as unimportant, but attention was called to the faulty instruction of children in certain families. He stated that the constipation of infancy was due to undeveloped muscles; and of old age to inactivity and atonicity.

Under mechanical causes he considered diet, sedentary life, abnormal positions, angulations, coloptosis and hypertrophy of the rectal valves.

The predisposing diseases mentioned were colitis, stricture, proctitis, fissure, hemorrhoids, fistula, polypi, enlarged prostate and malignant growths.

Have We An Ideal Operation for Internal Hemorrhoids?—A new hemorrhoidal clamp by A. B. Cooke, M. D., of Nashville, Tenn. (American Proctological Society). An ideal operation for internal hemorrhoids must embody the five following surgical principles and precepts:

1. Complete hemostasis.
2. Immediate closure of the operative wounds.
3. Preservation of the function of the parts.
4. Permanency of cure.
5. Due consideration of the factors of safety, simplicity of technic, time required for recovery, and the amount of post-operative discomfort.

The ligature operation violates principle 2.

The clamp and cautery operation falls short with reference to the fourth class of principles in each of its several points.

The Whitehead operation violates principles 1, 3 and 5, and is, moreover, as unnecessary and unjustifiable procedure.

The operation by means of Earl's clamp is a modification of the Whitehead method and a vast improvement upon it, but is apt, likewise, to violate principle 3.

Pennington's enucleation operation is open to criticism under classes 1 and 5 of the surgical principles. In spite of its ingeniousness it is dangerous.

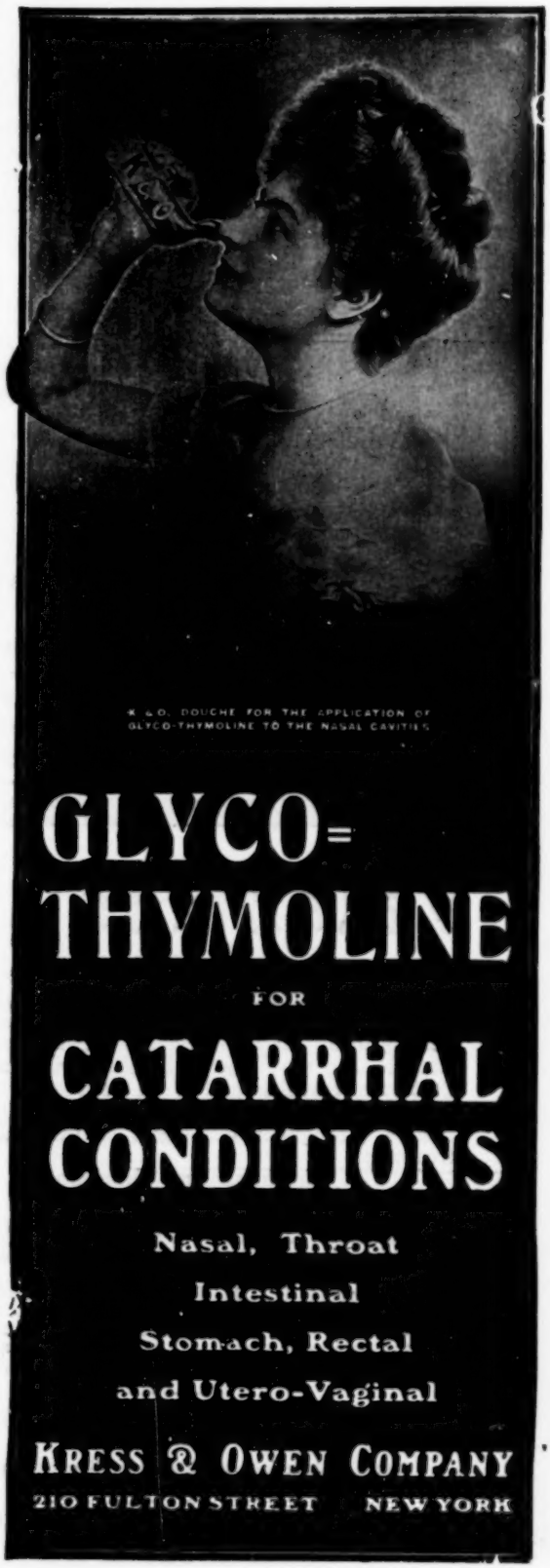
The clamp and suture operation described by the author fulfills all conditions and is entitled to be considered the most nearly ideal of any yet devised.

A new hemorrhoidal clamp designed to facilitate the last-named operation was presented and strongly recommended.

A symposium on constipation embracing seven different parts of subject was presented.

Bubonic Plague.—G. W. McCoy, San Francisco (Journal A. M. A., October 14), gives a history of the findings and experience with rural bubonic plague of ground-squirrel origin in California. There were three clinical types, the severe acute, the mild acute and the subacute or pyemic. Instances of each type are reported. No case of primary pneumonic or primary septicemic plague from ground-squirrel infection has come under observation, and he is happy to say that the more recent cases have been recognized as suspicious by the attending physicians. The diagnosis was confirmed in all cases. Experiments were made to determine the relative virulence of the germs from each type of case for laboratory animals, and they were found to be as pathogenic when taken from the cultures of the milder cases as from the worst. Whenever practicable the anti-plague serum was used, though most of the cases were too far advanced to be benefited by it. The other treatment was purely symptomatic. The first proof of plague among the squirrels was obtained in the summer of 1908. Extended investigation since that time has shown that the disease is probably confined to ten counties lying east and south from San Francisco Bay. The germs are morphologically, culturally and bacteriologically identical with those from men and rats. As to their pathogenicity, he says the organism appears slightly less virulent than that from other sources, but he cannot speak definitely as to this point. An interesting observation is that many of the squirrels from the infested zone are relatively immune to laboratory infection with *Bacillus pestis*. Another disease with gross lesions very like the plague but bacteriologically distinct has been discovered in the routine examination of these rodents. McCoy regrets to say that we have no very definite information as to the method by which the disease spreads among the squirrels, though they have been able to show experimentally that it can be carried from squirrel to squirrel by fleas, and this is the principal suspected source, though possibly other ectoparasites may be concerned. One of the patients, a boy, was bitten in the hand by a squirrel, and as the primary bubo occurred in the axilla of the same side it is reasonable to infer that the bite caused the infection, especially as many of the plague squirrels have lung lesions. It can also be transmitted to squirrels by feeding. The reason that so few cases have occurred from squirrel infection is not altogether clear, but few of the infected squirrels have been found to have the bacilli extensively circulating in their blood. The chief danger from squirrel plague is the possibility of its extending to the rats in cities.

Epilepsy was described by Celsus as the "morbus major"; the French translated the term with the equally graphic *grand mal*, because the disease is terrifying and of gruesome magnificence.



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Hayden's Viburnum Compound

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To any doctor not familiar with the results following the administration of the original H. V. C., samples, formula and literature will be sent upon receipt of card.

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Most galenicals, particularly those containing alkaloids as active principles, **are quite stable** and hence there is no necessity for dating them. Fluid preparations of **DIGITALIS** and **ERGOT,** however, if **improperly stocked,** may deteriorate, and should therefore be dispensed in as fresh a condition as is possible. The dating on the package will be of much service to the pharmacist and the physician in enabling them to use reliable preparations.

We do not presume to say how long these preparations will keep. We have had preparations returned to us after two or three years which were entirely satisfactory for use, and, on the other hand, a considerable deterioration has occurred in less than one year. We believe, however, that liquid preparations of these drugs will remain satisfactorily active for at least a year, if they are kept in a cool place, tightly stoppered and protected from the light.

Preparations of the H. K. Mulford Company protected by the above dating system will include:

TINCTURE AND FLUID EXTRACT of DIGITALIS.

DIGITOL, a fat-free, standardized **TINCTURE OF DIGITALIS.**

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FLUID EXTRACT OF ERGOT.

We recommend the purchase of quantities to supply your needs for not longer than six months. Should the demand for these preparations justify purchasing in bulk, we recommend that the contents of the bulk package be transferred to tightly stoppered pint bottles, keeping them in a cool place protected from light.

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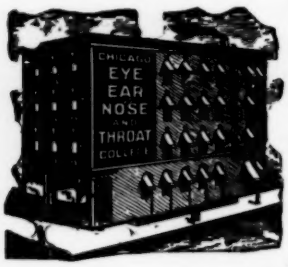

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SELECTIONS

How Can an Infected Sigmoid Diverticulum Be the Cause of a Retro-Peritoneal Abscess?—The following article by Dr. A. Teirlinck, of Gand, Belgium, was read by title (American Proctological Society):

In the present state of abdominal surgery the appendix is frequently regarded as the chief cause of all abdominal troubles.

Recently numerous works have been published concerning sigmoiditis and perisigmoiditis. Diverticular abscesses are not as frequent as appendicular abscesses. It should be borne in mind that the sigmoid is often located in the right iliac fossa and diverticular abscesses may be mistaken for appendicular trouble.

In the young the sigmoid flexure is free and communicates with the retro-mesenteric and pre-aortic cellular tissues by the tissue of the meso-colon. Infection can be transmitted from the diverticula into the retro-peritoneal cellular tissue by three means—the connective tissue, the lymphatic system, and the venous blood-vessels.

In adults the sigmoid is adherent to the posterior abdominal wall and in such cases there is another source of infection, an external one, due to the numerous anastomoses between the meso-colic glands and the parietal lymphatic system and between the sigmoid blood-supply and that of the retro-peritoneal region.

Watch for the development of (Am. Jour. of Surg.) **sub**phrenic abscess when there is persistent pain in the lower chest and a dry cough several weeks after operation for appendicitis abscess.

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Patients referred to us still remain under the care, advice, and prescription of their own Physician. All assistants and instructors are experts in their particular line.

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SELECTIONS

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We have become accustomed to seeing the date of manufacture on the labels of serums, vaccines, bacterins, etc., and it is not surprising to see this progressive firm take the lead in placing *dated Galenicals* on the market. The new dating system will be applied, however, only to the liquid preparations of those two of the most important of our vegetable drugs, Ergot and Digitalis, which are particularly prone to deterioration.

There is no necessity for placing the date of assay on most Galenicals, for fortunately, most of them are quite stable when care is used in their storage. Coca is an exception, it is true, but little Coca is used or should be used for its active principle, and hence it can be declared that *most Galenicals* are quite stable.

In the case of fluid preparations of Digitalis and Ergot, particularly the latter, which is so often employed as an emergency remedy, it is not right that the physician should be subjected to the *possibility* of employing an old, and perhaps weaker product. Because of the *possibility* of their deterioration, the H. K. Mulford Company proposes to safeguard pharmacist, physician and patient, by making it possible for the physician to prescribe and the pharmacist to dispense only preparations of Digitalis and Ergot which have recently been tested and standardized—physiologically and chemically.

For this advanced step, the H. K. Mulford Company deserves great credit, for they not only place the date of test on each package, but they recommend the purchase of quantities to supply the pharmacist's needs for not longer than six months. They cannot do more, for no one can tell how long those preparations will keep. Preparations two or three years old have been tested and found entirely satisfactory for use, and on the other hand a considerable deterioration has occurred in less than one year. Liquid preparations of these drugs should remain satisfactorily active, however, for at least a year, if they are kept in a cool place, protected from the light.

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the whole body usually suffers; every function is depressed, every tissue shows the lack of adequate nourishment. Effective treatment, therefore, should aim to accomplish not merely cardiac stimulation, but a great deal more. This is why

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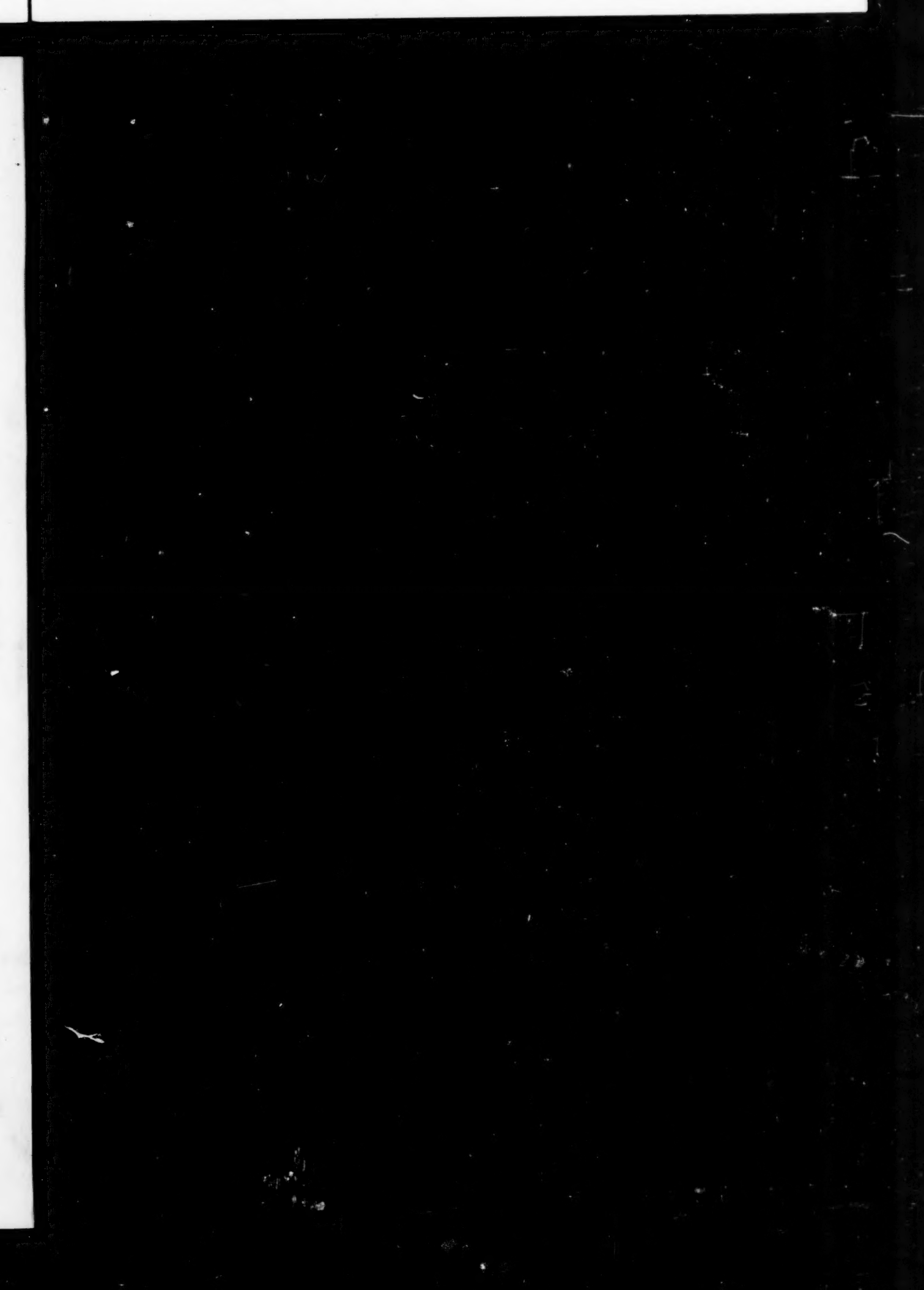
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